

DEPARTMENT OF ENERGY AND ENVIRONMENT, DIVISION OF ENVIRONMENTAL QUALITY

SUBJECT: Rule No. 2, Rule Establishing Water Quality Standards for Surface Waters of the State of Arkansas

DESCRIPTION: The Department of Energy and Environment, Division of Environmental Quality (“DEQ”) proposed this rulemaking before the Arkansas Pollution Control and Ecology Commission to Regulation No. 2 to incorporate statutory revisions made by the Arkansas General Assembly, clarify several provisions, and make stylistic and formatting corrections throughout the Regulation.

Under the federal Clean Water Act, states are given the responsibility to establish water quality standards, and at least once every three (3) years, states are to review the applicable water quality standards to determine whether any modifications are appropriate. *See* Section 303(c) of the Clean Water Act. Any changes to water quality standards adopted by a state during the Triennial Review must be submitted to EPA for review and approval or disapproval. The standards adopted by the state are submitted to EPA along with any supporting information, *see* 40 C.F.R. § 131.20(c), and a certification that the standards were adopted pursuant to state law, *see* 40 C.F.R. § 131.6(e). This submittal is to be provided to EPA within thirty (30) days of the final State action to adopt and certify the revised standards. *See* 40 C.F.R. § 131.20(c). After the State submits its revised water quality standards, EPA must approve or disapprove the revisions. *See* 40 C.F.R. § 131.21. If EPA approves the new state standards, then those standards can be used for purposes of implementing the federal Clean Water Act, including such actions as listing water quality impairments, calculating TMDLs, and developing effluent limits for NPDES permits. *See* 40 C.F.R. § 131.21(d).

If the revised water quality standards are disapproved by EPA, then the standards are not applicable water quality standards for purposes of implementing the federal Clean Water Act. If the water quality standards adopted by a State are disapproved by EPA, then those standards cannot be used to implement the provisions of the federal Clean Water Act until the standards have been revised through a new rulemaking and re-submitted to EPA for review and approval.

The Commission’s authority for amending Regulation No. 2 is found in Ark. Code Ann. §§ 8-6-207(b)(1), 8-4-202(a), and 8-1-203(b)(1)(A).

Proposed changes to Regulation No.2 include:

- *Incorporation of Updates to Arkansas Law.* Acts 315 and 910 of 2019 were enacted by the Arkansas General Assembly and require revisions to Regulation No. 2 concerning the name change from Arkansas Department of Environmental Quality to Division of Environmental Quality and the use of “rule” in lieu of “regulation”;

- *Amendments to Provide Clarification and Minor Corrections.* Clarification of sections of the regulation that were otherwise unclear, and minor corrections to make the regulation more illustrative of the legislative and regulatory intent;
- *Regulatory Amendments for Consistency with Statutory Changes.* To amend other Chapters of the Regulation for consistency with the statutory changes made by the General Assembly and federal regulations, primarily concerning terminology and program name changes;
- *Amendments to Reflect Changes in Rule 6.* Amendments to remove permitting language from Reg. 2 (Rule 2) that is being adopted into Rule 6 – Regulations for State Administration of the National Pollutant Discharge Elimination System (NPDES); and
- *Stylistic and Formatting Corrections.* To make minor, non-substantive stylistic and formatting corrections throughout the Regulation.

The following changes were made based on public comments:

NOTE: Proposed revisions removing permitting language, receiving water language, or discharge language from Rule 2 will not occur at this time. This language will remain in Rule 2 until adoption into Rule 6 has been approved by the APC&EC, Legislative Committees, and U.S. EPA. This includes Rules 2.404, 2.407, 2.408, 2.409, 2.410, 2.502, 2.503, 2.504, 2.505, 2.507, 2.508, 2.509, 2.510, 2.512, and Appendix A.

Rule 2.410 Oil and Grease

Revisions to 2.410 will be made to reflect “aquatic biota” in lieu of “associated biota.” Rule 2.106 defines aquatic biota as “All those life forms which inhabit the aquatic environment.”

Rule 2.507 Bacteria

The second paragraph will not include a reference to “or fecal coliform”; this proposed addition is removed.

Rule 2.510 Oil & Grease

Revisions to 2.410 will be made to reflect “aquatic biota” in lieu of “associated biota.” Rule 2.106 defines aquatic biota as “All those life forms which inhabit the aquatic environment.”

Rule 2.511(A) Mineral Quality, Site Specific Mineral Quality Criteria

White River section noted will be revised as, “White River (WHI0052 to Missouri state line, including Beaver Reservoir).”

Kings River will be moved to reflect that it flows into the above section of White River downstream of Holman Creek.

The “†” footnote indicator will be removed from the Poteau River and Unnamed Tributary entries.

Stennitt Creek revised TDS and sulfate will be added to the final rule. Additionally, Brushy Creek and Unnamed Tributary revised mineral criteria will be added to the final rule.

The “†” footnote indicator will be removed from the Town Branch and Holmand Creek entries.

The Haliburton temporary EIP criteria and footnote located in Appendix A will also be located in Rule 2.511(A).

Chamberlain Creek from headwaters to confluence with Cove Creek	Chlorides 68 mg/L, sulfates 1,384 mg/L, TDS 2,261 mg/L***†
Cove Creek from the confluence with Chamberlain Creek to the Ouachita River	Sulfates 250 mg/L, TDS 500 mg/L***†
Lucinda Creek from the confluence of Rusher Creek to the confluence with Cove Creek	Sulfates 250 mg/L, TDS 500 mg/L***†
Rusher Creek from the confluence of the East and West Forks to confluence with Lucinda Creek	Sulfates 250 mg/L, TDS 500 mg/L***†
Reyburn Creek from headwaters to confluence of Francois Creek	Sulfates 250 mg/L, TDS 500 mg/L***†
Scull Creek from a point approximately 350 feet upstream of Clearwater Lake to Clearwater Lake (including Clearwater Lake) and from Clearwater Lake dam to confluence Reyburn Creek	Sulfates 250 mg/L, TDS 500 mg/L***†

***These temporary standards variations are effective for 160 months from EPA’s approval of the EIP on January 7, 2020.

Appendix A

The following footnotes will not be stricken and will remain in the Rule.

“*Increase over natural temperatures may not be more than 2.8°C (5°F).

**At water temperatures ≤ 10°C or during March, April and May when stream flows are 15 cfs and greater, the primary season dissolved oxygen ~~standard~~ criteria will be 6.5 mg/L. When water temperatures exceed 22°C, the critical season dissolved oxygen standard may be depressed by 1 mg/L for no more than 8 hours during a 24-hour period.”

The “†” footnote indicator will be removed from the Holman Creek, Town Branch, Unnamed Tributary of Brushy Creek and Brushy Creek entries.

The “†” footnote indicator will be removed from the Crooked Creek and White River entries.

Stennitt Creek revised sulfate will be added to the final rule. Additionally, Brushy Creek and Unnamed Tributary revised mineral criteria will be added to the final rule.

The “†” footnote indicator will be removed from the Poteau River and Unnamed Tributary entries.

Rule 2.511(A), Appendix A-OM, Appendix A-GCP

The footnote will be revised to “*These temporary standards variations are effective for 148 months from EPA’s approval of the EIP.”

PUBLIC COMMENT: A public hearing was held on July 29, 2020. The public comment period expired on September 8, 2020. Due to their length, the Division’s Responsive Summary and Supplement to Responsive Summary have been attached separately.

The proposed effective date is pending legislative review and approval.

FINANCIAL IMPACT: The agency states that the amended rule has no financial impact and that implementing the revised federal rules and clarification/correction of various sections of this regulation is not expected to cause an increase in costs to private entities because permittees were expected to comply with these requirements prior to incorporation.

LEGAL AUTHORIZATION: Pursuant to Ark. Code Ann. § 8-4-202(a), the Arkansas Pollution Control and Ecology Commission is given and charged with the power and duty to adopt, modify, or repeal, after notice and public hearings, rules implementing or effectuating the powers and duties of the Commission and the Division of Environmental Quality under the Arkansas Water and Air Pollution Control Act, Ark. Code Ann. §§ 8-4-101 to -318. The Commission is further given and charged with the power and duty to promulgate rules, including water quality standards. *See* Ark. Code Ann. § 8-4-201(b)(1)(A). *See also* Ark. Code Ann. § 8-4-202(b)(3).

The agency states that the amended rule is required to comply with the federal Clean Water Act, 33 U.S.C. § 1251 et seq. and the regulations promulgated thereunder.

BEFORE THE ARKANSAS POLLUTION CONTROL AND ECOLOGY COMMISSION

IN THE MATTER OF AMENDMENTS TO)
RULE 2, RULE ESTABLISHING) DOCKET NO. 20-004-R
WATER QUALITY STANDARDS FOR SURFACE)
WATERS OF THE STATE OF ARKANSAS)

ARKANSAS DEPARTMENT OF ENERGY AND ENVIRONMENT
DIVISION OF ENVIRONMENTAL QUALITY'S
RESPONSIVE SUMMARY

Pursuant to Arkansas Pollution Control and Ecology Commission ("APC&EC" or "Commission") Minute Order 20-16, the Arkansas Department of Energy and Environment, Division of Environmental Quality ("DEQ" or "Division") submits the following Responsive Summary regarding proposed changes to APC&EC Rule 2, Rule Establishing Water Quality Standards for Surface Waters of the State of Arkansas.

Pursuant to the Federal Water Pollution Control Act ("Clean Water Act"), 33 U.S.C. § 1251 *et seq.*, Arkansas is authorized to establish and administer water quality standards. The Clean Water Act requires states to review their water quality standards on a triennial basis and to amend those standards as necessary. As a result of the triennial review process, DEQ proposes to amend portions of APC&EC Rule 2.

On June 26, 2020, the Commission granted DEQ's Petition to Initiate Rulemaking to amend APC&EC Rule 2.

A public hearing was held on July 29, 2020, in North Little Rock. The deadline for submitting written comments on the proposed changes was September 8, 2020. Thirty-six (36) commenters submitted written comments during the public comment period. One (1) individual provided oral comments on the record during the public hearing. A list of those individuals and organizations providing written and oral comments is attached as Exhibit A.

The comments are grouped according to Rule Section.

NOTE: Proposed revisions removing permitting language, receiving water language, or discharge language from Rule 2 will not occur at this time. This language will remain in Rule 2 until adoption into Rule 6 has been approved by the APC&EC, Legislative Committees, and U.S. EPA. This includes Rules 2.404, 2.407, 2.408, 2.409, 2.410, 2.503, 2.505, 2.507, 2.508, 2.509, 2.510, 2.512, and Appendix A.

RECEIVED
FEB 10 2022
BUREAU OF
LEGISLATIVE RESEARCH

COMMENTS RELATED TO SPECIFIC RULES

Rule 2.102 Purpose

Chuck Bitting

Comment: Remove "surface" as that is not protective of all waters of the State.

Response: Rule 2 establishes water quality standards for surface waters in the State of Arkansas. Removal of "surface" from the Purpose - Rule 2.102 would put this section in conflict with the rest of the rule, including the title of the rule, the authority of the rule (Rule 2.101), and the many other sections of the Rule that set water quality standards for surface waters.

Rule 2.104 Policy for Compliance

Beaver Water District (BWD)

Comment: This section is entirely a permitting provision, but DEQ has not proposed to remove it from Reg. 2. BWD recommends that the language of Rule 2.104 be added to Reg. 6. Once that is done and there is a fully-approved and effective Rule 6, Rule 2.104 should be deleted. (See comment on permitting language.)

Response: DEQ does not propose to remove this policy statement from this rule because Rule 2.104 is included to comply with 40 C.F.R. § 131.5(a)(5).

EPA

Comment: Strike “, unless the permittee is completing site-specific criteria development or is under a plan approved by the Department, in accordance with Regs. 2.306, 2.308, and the State of Arkansas Continuing Planning Process.” As described in the EPA’s October 31, 2016 action, we did not act on this phrase for the reason described in our TSD and here in ADEQ’s justification. The EPA supports ADEQ’s proposal to strike this phrase.

Response: The Division acknowledges this comment.

Rule 2.105 Environmental Improvement Projects

EPA

Comment: The insertion of “temporary” provides clarity for this authorizing provision. The EPA recognizes that the statutory language for Environmental Improvement Projects (EIP) held in Appendix B cannot be modified by the Arkansas Pollution Control & Ecology Commission (Commission) but recommends that all future submissions and supporting documents clearly identify the term sought for an EIP. Without this specificity, an EIP may be considered incomplete per 40 CFR 131.6. See additional comments on Revision: Reg. 2.309 – Water Quality Standards Temporary Variance regarding EIPs.

Response: DEQ has inserted the word “temporary” based on EPA’s comments regarding a recently approved EIP. As noted in a November 30, 2018 ADEQ letter to Russell Nelson, seven (7) rulemaking documents stated that the EIP was a temporary modification to water quality standards and four (4) rulemaking documents stated the 12.3 year term of that EIP. The insertion of “temporary” in Rule 2.105 does not change or conflict with current Arkansas law. Ark. Code Ann. § 8-5-901 *et seq.* requires a schedule for meeting “the post project water quality standards” as part of any a long-term improvement project. Thus, Arkansas law does not authorize a “change in water quality standards to accommodate a long-term improvement project” that is not temporary in nature.

Rule 2.106 Definitions (not related to flows)

EPA

Comment: Effluent: Insert definition of “Effluent.” The EPA supports the inclusion of this definition as it will add clarity to subsequent provisions.

Response: DEQ will move forward with proposed revisions to add a definition of effluent to the Rule.

Chuck Bitting

Comment: Impairment definition does not consider a lowering of water quality, cultural, or societal conditions of Tier 3 streams.

Response: The definition of impairment states “exceedances of the water quality standards by a frequency and/or magnitude which results in any designated use of a waterbody to fail to be met as a result of physical, chemical or biological conditions.” “Tier 3” refers to a level of antidegradation protection assigned to a waterbody. Waterbodies with the designated uses of Extraordinary Resource Waters, Ecologically Sensitive Waterbody, or Natural and Scenic Waterways receive Tier 3 protection in Arkansas. Therefore, the definition of impairment includes the designated uses that apply to waterbodies that receive Tier 3 protection in Arkansas.

Comment: waterbodies, waterways, waters fails to consider all waters of the State.

Response: Pursuant to Rule 2.102, Rule 2 includes water quality standards for the surface waters of the State of Arkansas.

BRWA, Ozark Society, Fay Knox, Sandy Bernet, Shawn Porter, Carol Storthz, Michael E. Kelly, Richard Osborne, Brenda Scheffler, Larry and Marti Oelsen, Mark Smith, Chris Cristoffel, Beth Ardapple, Fran Alexander, Linda Stith

Comment: Harmful Algal Blooms (HAB): BRWA recommends insertion of this term in the Definitions section especially given the increased frequency and presence in Arkansas lakes and streams. Harmful Algal Blooms (HABs) are the rapid growth of algae accompanied often by cyanobacteria that can cause harm to animals, people, or the local ecology.

Response: The phrase HAB is not used in the document. Therefore, it does not need to be included in the definition section.

Comment: Primary Contact Season: BRWA recommends inserting the dates of the primary contact season for clarity. The “Primary Season” noted in definitions is confusing and does not have the same dates as “Primary Contact Season” mentioned later in Section 2.507.

Secondary Contact Season: BRWA recommends inserting the dates of the secondary contact season for clarity.

Response: The definition of “primary season” includes the phrase “from about mid-September to mid-May”. Primary season is related to the spawning season of most fishes and is noted in the dissolved oxygen criteria. The term “primary season” does not define any recreational use.

The phrase “primary contact” is used in Rule 2.507 to indicate the season for the designated use of “Primary Contact Recreation,” which is described in Rule 2.302(D) as a beneficial use “where full body contact is involved.”

Ozark Society

Comment: Unfortunately the DEQ definition of base flow is seasonal (June 1 – end of October) and does not agree with the hydrological definition of base flow, which is well defined by the USGS on the basis of actual stream flow data. The hydrologically defined base flow occurs throughout the year, and is only marginally related to the seasonal definition. The hydrological definition of a storm flow event is whenever there is not base flow – that makes sense, and the amount of storm flow can be obtained from streamflow data. But hydrological storm flow occurs regularly, if less frequently, during the DEQ base flow period, witness Hurricane Laura. So, the terminology is confusing and probably misleading to anyone other than DEQ/EPA insiders. Perhaps warm season flow and cold season flow would be more appropriate for the DEQ document.

Furthermore, the quarterly grab sample methods used by DEQ cannot be implemented for the most important storm flow events, which occur only 6-10 times a year on Ozark Highland streams that we have analyzed. There is little chance that the grab sample scheme as currently implemented actually gathers enough data to justify a “storm flow” analysis.

This “storm flow” conundrum is important when trying estimate the Total Phosphorus load carries by Arkansas streams – which by some estimates contribute 5-10% of the TP into the Gulf of Mexico dead zone. The Big Creek data in the final report suggests that 90% of the TP load occurs during 10% of the flow, which is seldom sampled.

Response: Rule 2, its definitions, and the criteria for turbidity are not intended to provide and do not provide a basis or methodology for trying to estimate the Total Phosphorus load carried by Arkansas streams. See DEQ’s comments on Rule 2.503. DEQ sampling scheme is either monthly or twice per quarter for rivers and streams. Ambient samples are scheduled ahead of time; weather and flow are not considered when planning or executing river/stream sampling.

BWD

Comment: Rule 2.106 provides the definitions for certain terms used in Rule 2. For multi-word terms, only the first letter of the first word is capitalized. Throughout Rule 2, there is inconsistent capitalization of even the first word of terms that are defined in Rule 2.106. Because of this, it is difficult to recognize those words and terms in the text that have particularized meanings that may differ from the ordination meaning of the words.

The first letter of all words in each term defined in Rule 2.106 should be capitalized in that section and throughout the Rule.

Response: The current formatting meets the requirements set forth in the DEQ and APC&EC “Regulation Formatting and Drafting Guidelines” and is consistent with other rules in the Office of Water Quality and other DEQ offices. Regulation Formatting and Drafting Guidelines can be found on the APC&EC website.

Comment: Critical Flow: This definition begins with, “The flow volume used as background dilution flows in calculating concentrations of pollutants from permitted discharges” and then further defines the critical flow for certain parameters. It appears to largely be a permitting provision, but DEQ has not proposed to remove it from Reg. 2. The term does appear elsewhere in Rule 2, however, including in Rule 2.501.

BWD questions whether this provision as written is appropriate for Rule 2, whether the definition should be revised to reflect its use in the water quality standards context, and whether the permitting language should instead be included in Reg. 6. (See comment about Permitting.)

Response: This definition is relevant for purposes other than permitting including, but not limited to, site specific criteria development and TMDL development.

Chapter 2 Antidegradation Policy

BRWA, Ozark Society, BWD, Fay Knox, Sandy Bernet, Shawn Porter, Carol Storthz, Michael E. Kelly, Richard Osborne, Brenda Scheffler, Larry and Marti Oelsen, Mark Smith, Chris Cristoffel, Beth Ardapple, Fran Alexander, Linda Stith

Comment: The BRWA & OS advocates the inclusion of the anti-degradation implementation assessment methodology by reference and regulation. As discussed in the stakeholder meetings, DEQ does not plan on the antidegradation policy and its associated implementation methodology to be codified in regulation, but as guidance or best practices. Without regulatory requirements in statute, the anti-degradation policy will not be enforceable and will not be protective of Arkansas waters.

Response: The Antidegradation Policy is a part of Rule 2 and is enforceable. Arkansas's antidegradation implementation methodology is a stand-alone document that works in concert with the Continuing Planning Process (CPP) and the Antidegradation Policy, Chapter 2 of Rule 2.

Comment: State antidegradation policy and implementation procedures must be consistent with the components detailed in 40 CFR 131.12. The relationship between the state's standards/antidegradation policy and its implementation should be clear if the AIM is not included in either the water quality standards or the state's Continuing Planning Process (CPP) document consistent with 40 CFR 130.5(b)(6).

It is recommended that the agency review how designated uses are defined in relation to Tier I, II & III waters and integrated into the proposed antidegradation policy with regard to those waterbodies designated for drinking water uses. It is also recommended that the agency integrate the antidegradation policy with both Regulation 2 and the CPP.

Response: Arkansas's antidegradation policy and Antidegradation Implementation Methodology (AIM) are consistent with the components in 40 C.F.R. § 131.12. The Antidegradation Policy is a part of Rule 2. The Antidegradation Implementation Methodology is a stand-alone document that works in concert with the Continuing Planning Process (CPP) and the Antidegradation Policy, Chapter 2 of Rule 2. Section 2 of the AIM states "This document shall serve as the implementation methodology for the Antidegradation Policy."

EPA

Comment: The EPA has provided comments and recommendations on initial and subsequent drafts of the state's Antidegradation Implementation Methodology (AIM). See Attachment 1. State antidegradation policy and implementation procedures must be consistent with the components detailed in 40 CFR 131.12. The functional relationship between the state's standards/antidegradation policy and its implementation should be clear if the AIM is not

included in either the water quality standards or the state's Continuing Planning Process (CPP) document consistent with 40 CFR 130.5(b)(6).

Response: Arkansas's antidegradation policy and Antidegradation Implementation Methodology (AIM) are consistent with the components in 40 C.F.R. § 131.12. Arkansas's AIM identifies the functional relationship between it and the Antidegradation Policy in Rule 2 as follows: "This document shall serve as the implementation methodology for the Antidegradation Policy."

Chapter 3 Waterbody Uses

BRWA, Ozark Society, Fay Knox, Sandy Bernet, Shawn Porter, Carol Storthz, Michael E. Kelly, Richard Osborne, Brenda Scheffler, Larry and Marti Oelsen, Mark Smith, Chris Cristoffel, Beth Ardapple, Fran Alexander, Linda Stith

Comment: The BRWA & OS recommends insertion of text or by reference specifying how designated uses are determined, evaluated, and maintained. For instance, it isn't clear if the designated uses and data justifying these designations dated back to 1972, or some other study.

Response: The supporting documentation used in the development of Rule 2 is not rule language and therefore does not belong in Rule 2. Appendix E in Rule 2 lists the criteria to be considered in determining whether the designated use of Extraordinary Resource Water (ERW), Ecologically Sensitive Waterbody (ESW), or Natural and Scenic Waterway (NSW) should be maintained.

Rule 2.302 Designates Uses

Chuck Bitting

Comment: ORW streams may also have high cultural and societal values not captured by water quality parameters. This should be clarified. (2.302 C)

Response: Rule 2 does recognize the value of outstanding resource waters, for example, the Extraordinary Resource Water designated use is defined as follows:

This beneficial use is a combination of the chemical, physical and biological characteristics of a waterbody and its watershed that is characterized by scenic beauty, aesthetics, scientific values, broad scope recreation potential and intangible social values.

BRWA, Ozark Society, Fay Knox, Sandy Bernet, Shawn Porter, Carol Storthz, Michael E. Kelly, Richard Osborne, Brenda Scheffler, Larry and Marti Oelsen, Mark Smith, Chris Cristoffel, Beth Ardapple, Fran Alexander, Linda Stith

Comment: The BRWA & OS believes that all streams that flow in or contribute to an Extraordinary Resource Water, Ecologically Sensitive Waterbody, Natural and Scenic Waterways, or Tier III stream be categorized as the same designation of the receiving main stream. This designation would provide additional protection to the highest water quality stream designation and reduce potential disturbance and degradation upstream of the designated waterway.

Response: Adding the designated use of ERW, ESW, or NSW to a waterbody or waterbody segment must be completed in accordance with Rule 2. Rule 2, Appendix F identifies the factors considered in adding the designated use of Extraordinary Resource Water, Ecologically Sensitive Waterbody, or Natural and Scenic Waterway to a waterbody or waterbody segment.

EPA & CAW

Comment: For the purpose of improving transparency with the public, it would be helpful if ADEQ would consider providing a better link between designated uses listed here and the parameters used to evaluate their support. See general comment provided for Chapter 5 below.

Response: See the response to EPA's general comments on Chapter 5.

BWD

Comment: The Designated Uses are defined in this section. The parameters or water quality criteria that apply to each use are not listed in this section or elsewhere in Rule 2.

BWD suggests that Rule 2.302 include a listing of the water quality criteria that will be used to evaluate each Designated Use. BWD would particularly like to see this specified for the Domestic Water Supply use.

Response: See the response to EPA's general comments on Chapter 5.

Rule 2.302(G) Domestic Water Supply

BWD

Comment: This section is proposed to provide: "This beneficial use designates water that will be protected for use in public and private water supplies. Conditioning or treatment may be necessary prior to use."

BWD requests that the last sentence in this provision be changed to read as follows: Conditioning or conventional treatment consisting of no more than flocculation, coagulation, sedimentation, filtration, and disinfection may be necessary prior to use.

Response: The specific water treatment processes required for public water supplies are within the purview of the water provider and regulated by the Arkansas Department of Health.

Rule 2.305 Short Term Activity Authorization (STAA)

BRWA, Ozark Society, Fay Knox, Sandy Bernet, Shawn Porter, Carol Storthz, Michael E. Kelly, Richard Osborne, Brenda Scheffler, Larry and Marti Olsen, Mark Smith, Chris Cristoffel, Beth Ardapple, Fran Alexander, Linda Stith

Comment: "The Director may authorize, with whatever conditions deemed necessary and without public notice, short term activities which might cause a violation of the Arkansas Water Quality Standards." The BRWA & OS disagrees that the Director should be allowed to circumvent the public process by not holding public review of short-term activities which could potentially represent serious degradation of water quality standards except in the case of emergencies. The elimination of requirements of Regulation 8 represents a lack of transparency to the public which is concerning. The recent experience with the Bethel Heights WWTP is an example of potential abuse which could arise from non-disclosure of information if the Director had enacted Reg. 2.305. BRWA advocates the removal of the exemptions from the public process and oversight.

Response: DEQ initiated an enforcement action against the City of Bethel Heights for permit violations that included violations for non-disclosure of information by the City of Bethel Heights. The City of Bethel Heights failed to report lab results that indicated permit violations. This failure violated Arkansas law and the City of Bethel Heights's permit. These violations were not authorized by DEQ and were not associated with any STAA that was authorized by DEQ.

STAAs are for short-term projects that may result in a temporary excursion in water quality criteria. Most commonly, STAAs are issued for work to repair bridges or clear storm debris from bridges. Activities covered under STAAs are not expected to result in serious degradation of water quality. The public can access a database of STAAs on the DEQ website <https://www.adeq.state.ar.us/water/planning/instream/staa.aspx>.

Rule 2.308 Site Specific Criteria

BWD

Comment: BWD suggests adding to this section language to the effect that preference will be given to the method that produces the more protective criteria.

Response: Any site specific criteria will be reviewed to ensure appropriate protection of designated uses.

CAW

Comment: Part (A)(2) indicates that site specific numerical values may be established based on “304(a) Guidance modified to reflect site conditions (i.e., Water Effects Ratio);” It should be noted that the Biotic Ligand Model (BLM) has been the EPA’s recommended approach for developing site-specific criteria for copper since 2007. The BLM should be better integrated into the agency’s decision process.

Response: Rule 2.308 mirrors 40 C.F.R. § 131.11. The Division acknowledges EPA’s recommendation of the BLM approach over the WER approach for copper. The BLM approach qualifies as “other scientifically defensible methods” under Rule 2.308 (A)(3) and 40 C.F.R. § 131.11.

EPA, BWD

Comment/Recommendation: Part (A)(2) indicates that site specific numerical values may be established based on “304(a) Guidance modified to reflect site conditions(i.e., Water Effects Ratio);” Please note that the Biotic Ligand Model (BLM) has been the EPA’s recommended approach for developing site-specific criteria for copper since 2007. This use of this approach is currently in development for various other metals as well. While the EPA will consider criteria based on a water effect ratio (WER), we will use the EPA’s *Draft Technical Support Document: Recommended Estimates for Missing Water Quality Parameters for Biotic Ligand Model* to run a BLM if it is not otherwise provided. The EPA will defer to the more protective criteria based on either the WER or BLM approach.

Although WERs can be conducted for parameters other than metals, the EPA has found that WER studies for contaminants like ammonia or cyanide have either resulted in a WER of approximately “1” or could not be successfully completed due to analytical issues. This may be the case for other §304(a) contaminants. The EPA no longer recommends use of WERs for aluminum given the difficulty in keeping it dissolved in solution at the level that will generate a LC50 for a WER study. Also, we have noted that Regulation 2 does not include aquatic life criteria for aluminum. The EPA has also commented on the use of the EPA’s §304(a) criteria recommendations in the development of WERs for parameters other than metals in response to recent proposed updates for Arkansas’s CPP.

Response: Rule 2.308 mirrors 40 C.F.R. § 131.11. The Division acknowledges EPA's recommendation of the BLM approach over the WER approach for copper and the exclusion of aluminum and non-metal WERs. The BLM approach qualifies as "other scientifically defensible methods" under Rule 2.308 (A)(3) and 40 C.F.R. § 131.11. Regarding aluminum criteria, DEQ evaluated these criteria recommendations and provided the required explanation in DEQ's § 304(a) criteria justification document (attached).

Rule 2.309 Temporary Variances

Chuck Bitting

Comment: The maximum length of a temporary variance should be stated.

Response: 40 C.F.R. § 131.14 does not include a maximum length for temporary variances.

EPA

Comment: The EPA supports the ADEQ's proposed revisions updating Reg. 2.309 referencing 40 CFR 131.14 regarding temporary variance. Although states are not required to include an authorizing provision for variances in their water quality standards, such provisions can provide clarity and direction for the public/regulated community. The use of variances as defined in 40 CFR 131.14 and associated guidance could be a useful tool to be utilized as an alternative to permanent site-specific criteria modification. A variance could be particularly useful in place of an EIP (Reg. 2.105, Appendix B) given that the limiting factor that is the three-year restriction for that type of project.

Response: Environmental Improvement Projects are long-term environmental projects "that are of such a magnitude that more than three (3) years will be required to complete the project." See Ark. Code Ann. §§ 8-5-901, *et seq.*

Chapter 4 General Standards

EPA, CAW

Comment: It is presumed that each of the general standards provisions in this chapter apply to the protection of all uses in all waters of the state. It is recommended the opening provision to Chapter 4 clarify that, except for Biological Integrity, each of the following general standards provisions apply to all applicable uses in all waters of the state. This will provide added transparency as to the affected uses in those cases where impairments are identified for these general parameters.

Response: Rule 2.401 Applicability states, "Unless otherwise indicated in this Chapter or in Appendix A, the general standards outlined below are applicable to all surface waters of the State at all times." Rule 2.405 Biological Integrity states, "For all waters with specific aquatic life use designated in Appendix A, aquatic biota should not be impacted."

Rule 2.401 Applicability

Chuck Bitting

Comment: Remove "surface".

Response: Only surface water standards are included in Rule 2. Removal of "surface" from the Applicability - Rule 2.401 would put this section in conflict with the title of the Rule, the authority of the Rule (Rule 2.101) as well as many other sections of the Rule.

Rule 2.404 Mixing Zones

BWD

Comment: DEQ proposes to delete this section, the last sentence of which provides that, “A mixing zone shall not include any domestic water supply intake.”

BWD objects to this deletion until the same or more stringent language has been added to a revised Reg. 6 that has received all necessary approvals, including that of the Governor, the General Assembly, APCEC, and EPA.

Response: Proposed revisions removing permitting language, receiving water language, or discharge language from Rule 2 will not occur at this time. This language will remain in Rule 2 until adoption into Rule 6 has been approved by the APC&EC, Legislative Committees, and U.S. EPA.

EPA

Comment: The federal regulation at 40 CFR 131.13 indicates that states “may, at their discretion, include in their State standards, policies generally affecting their application and implementation, such as mixing zones, low flows and variances.” We interpret any such discussion of mixing zones as discretionary policy information. As such, the above mixing zone provision may be removed without further review by the EPA. However, the EPA recommends that this and similar water quality implementation policy provisions be included in the state of Arkansas’s *Rule 6, Regulations for State Administration of the National Pollutant Discharge Elimination System (NPDES)*.

Response: Proposed revisions removing permitting language, receiving water language, or discharge language from Rule 2 will not occur at this time. This language will remain in Rule 2 until adoption into Rule 6 has been approved by the APC&EC, Legislative Committees, and U.S. EPA.

Rule 2.408 Solids, Floating Material and Deposits

BRWA, Ozark Society, Fay Knox, Sandy Bernet, Shawn Porter, Carol Storthz, Michael E. Kelly, Richard Osborne, Brenda Scheffler, Larry and Marti Oelsen, Mark Smith, Chris Cristoffel, Beth Ardapple, Fran Alexander, Linda Stith and Chuck Bitting

Comment: Waters shall have no distinctly visible solids, scum, algae, or foam of a persistent nature, nor shall there be any formation of slime, bottom deposits, algae, or sludge banks.

The BRWA & OS supports DEQ’s revision but requests that “persistent nature” be defined by number of days or another temporal unit. Define "of a persistent nature" in terms of days, weeks, or months, and whether this is a one-time event or repeating event.

Response: The ordinary meaning of persistent is: existing for a long or longer than usual time or continuously. The timeframe for persistent in this context can vary depending upon a number of site specific factors including but not limited to: parameter, waterbody type, season, and flow velocity. Establishing a specific period of time could limit the definition of persistent and result in under protection in certain situations and excess stringency in other situations. Proposed revisions removing permitting language, receiving water language, or discharge language from Rule 2 will not occur at this time. This language will remain in Rule 2 until adoption into Rule 6 has been approved by the APC&EC, Legislative Committees, and U.S. EPA.

BRWA, Ozark Society, Fay Knox, Sandy Bernet, Shawn Porter, Carol Storthz, Michael E. Kelly, Richard Osborne, Brenda Scheffler, Larry and Marti Olsen, Mark Smith, Chris Cristoffel, Beth Ardapple, Fran Alexander, Linda Stith

Comment: We also request the inclusion of “algae” in the definition for clarification and recognition of the increased frequency and extent of the algal occurrence throughout Arkansas.

Response: Algae are a necessary element in aquatic ecosystems, providing food and shelter for a number of aquatic macroinvertebrates and fish. A rule stating that waters shall have “no distinctly visible algae” would be inappropriate and negate the importance of algae’s role in the aquatic food web.

Reg 2.409 Toxic Substances

BRWA, Ozark Society, Fay Knox, Sandy Bernet, Shawn Porter, Carol Storthz, Michael E. Kelly, Richard Osborne, Brenda Scheffler, Larry and Marti Olsen, Mark Smith, Chris Cristoffel, Beth Ardapple, Fran Alexander, Linda Stith

Comment: “Toxic substances, including HABs, that may cause toxicity to human, animal, plant, or aquatic biota or interfere with normal propagation, growth, and survival of aquatic biota shall not be allowed into any waterbody.”

The BRWA & OS supports DEQ’s revision but requests that Harmful Algal Blooms (HABs) be inserted into the text for clarification and recognition of the increased frequency and extent of the HAB occurrence throughout Arkansas, although there should be a numeric standard for HABs.

Response: The term “toxic substances” includes all toxic substances including, but not limited to, cyanotoxins. Therefore, no change is being made based on this comment. Proposed revisions removing permitting language, receiving water language, or discharge language from Rule 2 will not occur at this time. This language will remain in Rule 2 until adoption into Rule 6 has been approved by the APC&EC, Legislative Committees, and U.S. EPA.

BWD

Comment: This section is proposed to state: “Toxic substances that may cause toxicity to human, animal, plant or aquatic biota or interfere with normal propagation, growth, and survival of aquatic biota shall not be allowed into any waterbody.”

BWD supports this proposed revision, although the deleted portion of the section suffers from the same problem outlined in comment of Rule 6 Permitting language.

Response: Proposed revisions removing permitting language, receiving water language, or discharge language from Rule 2 will not occur at this time. This language will remain in Rule 2 until adoption into Rule 6 has been approved by the APC&EC, Legislative Committees, and U.S. EPA.

EPA, CAW

Comment: This provision maintains the prohibition on discharges of toxic substances that may impact aquatic biota, but removes explicit statement requiring consideration of zone of initial dilution, mixing zone, or critical flow conditions. As noted in 40 CFR 131.13, states “may, at their discretion, include in their State standards, policies generally affecting their application and implementation, such as mixing zones, low flow and variances.” We interpret any such discussion of the above considerations as discretionary policy information. As such, the above

information with respect to zone of initial dilution, mixing zone and critical flow conditions may be removed without further review by the EPA. However, the EPA recommends that this and similar water quality implementation policy provisions be included in the state of Arkansas's *Rule 6, Regulations for State Administration of the National Pollutant Discharge Elimination System (NPDES)*.

However, the new sentence in this provision indicates that toxic substances that *may* cause toxicity are not allowed in the water. This suggests that any detection of any of these substances may cause a violation. This could lead to the interpretation that no dischargers can have these components in their effluent discharge because that would lead to detectible results which would be a violation. See comment on similar provision in Reg. 2.508 below.

Response: Proposed revisions removing permitting language, receiving water language, or discharge language from Rule 2 will not occur at this time. This language will remain in Rule 2 until adoption into Rule 6 has been approved by the APC&EC, Legislative Committees, and U.S. EPA.

Rule 2.410 Oil and Grease

CAW

Comment: Insert a comma after "grease," insert a comma after "globules," strike "or," insert a comma after "residue," insert a semicolon after "surface," strike "or," insert a semicolon after "waterbody."

Response: The comment matches the revisions noted in the strikethrough version of the proposed rule.

EPA, CAW

The EPA recommends replacing the term "associated biota" with "aquatic life" as it has previously been defined, or otherwise define the term "associated biota".

Response: DEQ will revise Rule 2.410 to reflect "aquatic biota" in lieu of "associated biota." Rule 2.106 defines aquatic biota as "All those life forms which inhabit the aquatic environment."

Chapter 5: Specific Standards

EPA, CAW

Comment:

- A. For purposes of providing greater transparency to the public, ADEQ should consider providing a clearer link between the parameters described in this chapter and those uses listed in Reg. 2.302, including:
 - a. 2.502 Temperature (e.g. criteria listed by waterbody type, could also include designated use?)
 - b. 2.503 Turbidity
 - c. 2.504 pH
 - d. 2.506 Radioactivity
 - e. 2.508 Toxic Substances (implied aquatic life use, are there other uses or specific tiers of aquatic life use to which this applies?)
 - f. 2.510 Oil and Grease (implied aquatic life use, are there other uses or specific tiers of aquatic life use to which this applies?)
 - g. 2.511 (A) Site Specific Mineral Quality Criteria

Response: Most Arkansas waterbodies have multiple designated uses. Pursuant to 40 C.F.R. § 131.11(a), Arkansas's water quality standards are protective of the most sensitive use for waters with multiple use designations.

Comment:

B. The applicable duration and/or frequency for the criteria for several parameters in this section have been removed or not described. Including this information allows for greater transparency and minimizes variations in interpretation. Such information is also a critical part of any criterion as it may define, change, or establish the level of protection to be applied in attainment decisions, thereby affecting existing standards implemented under section 303(c) of the Act. For example:

- a. 2.502 Temperature (duration and frequency)
- b. 2.504 pH (duration and frequency)
- c. 2.505 Dissolved oxygen (frequency)
- d. 2.508 Toxic substances (duration and frequency)
- e. 2.511 (A) Site Specific Mineral Quality Criteria (duration and frequency).

Response: As EPA is aware, duration and frequency for these parameters are found in other DEQ documents. DEQ is committed to updating duration and frequency language when appropriate.

Rule 2.502 Temperature

BWD

Comment: First, there is a conflict between the proposed change to this section listed on page 2 of the Petition and what appears in the marked-up draft Rule. BWD assumes the location of the phrase "For the purpose of determining effluent limits" is in error. Second, the deletion of the first sentence of Rule 2.502 regarding the prohibited variation from natural background temperature (including the duration) is a substantive, less-protective change to the criteria for which DEQ has not provided the requisite scientific justification.

BWD objects to the deletion of the first sentence of Rule 2.502, as the deletion lacks scientific justification and is inconsistent with the requirements of 40 C.F.R. 131.11.

Response: The language in Rule 2.502 "Heat shall not be added to any waterbody in excess of the amount that will elevate the natural temperature, outside the mixing zone, by more than 5⁰F (2.8⁰C) based upon the monthly average of the maximum daily temperatures measured at mid-depth or three feet (whichever is less) in streams, lakes or reservoirs." will not be removed from Rule 2.502. DEQ will review the intent, development, and history of temperature criteria to determine if revisions are appropriate in the future. Proposed revisions removing permitting language, receiving water language, or discharge language from Rule 2 will not occur at this time. This language will remain in Rule 2 until adoption into Rule 6 has been approved by the APC&EC, Legislative Committees, and U.S. EPA.

EPA, CAW

Comment: The EPA supports the deletion of the phrase "measured at mid-depth or three feet (whichever is less)". See the EPA's response to ADEQ's removal of "1.0 meter depth" language under Rule 2.502 below. However, consistent with the EPA's 4-part test for determining new or revised water quality standards (see FAQ #4 at <https://www.epa.gov/sites/production/files/2014->

11/documents/cwa303faq.pdf), the remaining deletions have the effect of revising applicable water quality standard by removing provisions identifying the magnitude (variability above background) and duration (monthly average of maximum daily temperatures) of criteria necessary to support a designated use. To support these deletions, the EPA would need as part of the state must submit supporting justification for why deleting these provisions are scientifically defensible and protective of the designated use in order for the EPA to approve them consistent with 40 CFR 131.5.

Response: DEQ will move forward with proposed revisions to remove “(applicable at 1.0 meter depth)”. The language regarding elevating the natural temperature will not be removed from Rule 2.502. DEQ will review the intent, development, and history of temperature criteria to determine if revisions are appropriate in the future.

EPA

Comment: In its October 31, 2016 action, the EPA did not act on the “applicable at 1.0-meter depth” language as noted in ADEQ’s justification, the EPA took no action because the phrase implies that criteria for a specific parameters would only apply at 1.0-meter depth. Although likely intended as directing assessment, this limitation means that a criterion would not apply at other depths. The EPA has long held the position that water quality criteria apply throughout the water entire column. The EPA supports the modification here and in subsequent provisions that refer to the 1.0- meter depth limitation.

Response: DEQ will move forward with proposed revisions to remove “(applicable at 1.0 meter depth).”

Rule 2.503 Turbidity (comments not related to storm flow)

EPA

Comment: First paragraph amended as follows: “There shall be no distinctly visible increase in turbidity of receiving in waters of the state attributable to discharges or instream anthropogenic activities.” The revised language generalizes but does not change the meaning of the statement. The EPA supports this change.

Response: Proposed revisions removing permitting language, receiving water language, or discharge language from Rule 2 will not occur at this time. This language will remain in Rule 2 until adoption into Rule 6 has been approved by the APC&EC, Legislative Committees, and U.S. EPA.

EPA

Comment: Strike “(applicable at 1.0 meter depth)” See comments for Reg. 2.502 above. The EPA supports this revision.

Response: DEQ will move forward with proposed revisions to remove “(applicable at 1.0 meter depth)”.

BWD

Comment: The units for the numeric Turbidity criteria in the table in this section are designated as NTU. Rule 2.106 define NTU as Nephelometric Turbidity Unit and provides, in part, that, “NTU are considered comparable to the previously reported Jackson Turbidity Units (JTU). May be reported as Formazin Turbidity Units (FTU) in equivalent units.” The United State Geological Survey (USGS) commonly reports Turbidity measurement in Nephelometric Turbidity Ration

Units (NTRU). Other methods for reporting Turbidity are also utilized. Because only NTU is listed in Rule 2.503, however, DEQ has previously rejected Turbidity data that are not reported as NTU for purposes of water quality assessments pursuant to sections 303(d) and 305(b) of the CWA. This means that significant amounts of Turbidity data collected by USGS, including data for Beaver Lake and its tributaries, are rejected by DEQ.

NTRU should be added to the numeric Turbidity criteria in Rule 2.503, either as separate columns or by changing the headings after finding that NTRU values are interchangeable with the NTU values. At the very least, the NTU definition in Rule 2.106 could be revised to include the use of NTRU measurements of Turbidity.

Response: DEQ is not aware of any scientific literature supporting the equivalency of NTRU and NTU. DEQ recently conducted a scientific literature review on this issue and did not find any scientific literature supporting the equivalency of NTRU and NTU turbidity values.

Rule 2.504 pH EPA, BWD, CAW

Comment: Second paragraph was removed. Consistent with EPA's 4-part test for determining new or revised water quality standards (see FAQ #4 at <https://www.epa.gov/sites/production/files/2014-11/documents/cwa303faq.pdf>), these deletions have the effect of revising applicable water quality standards by removing provisions identifying the magnitude (variability of pH no greater than 1 standard unit) and duration (24 hours) of criteria necessary to support a designated use. To support these deletions, the state must submit supporting justification for why deleting these provisions are scientifically defensible and protective of the designated use in order for the EPA to approve them consistent with 40 CFR 131.5.

Response: The discharge language regarding pH will not be removed from Rule 2.504. DEQ will review the intent, development, and history of pH criteria to determine if revisions are appropriate in the future. Proposed revisions removing permitting language, receiving water language, or discharge language from Rule 2 will not occur at this time. This language will remain in Rule 2 until adoption into Rule 6 has been approved by the APC&EC, Legislative Committees, and U.S. EPA.

Comment: Strike "For lakes, the standards are applicable at 1.0 meter depth." See comments for Reg. 2.502 above. The EPA supports this revision.

Response: DEQ will move forward with proposed revisions to remove "(applicable at 1.0 meter depth)."

Rule 2.505 Dissolved Oxygen

BRWA, Sandy Bernet, Shawn Porter, Carol Storthz, Michael E. Kelly, Richard Osborne, Brenda Scheffler, Mark Smith, Fran Alexander, Linda Stith

Comment: BRWA supports the deletion of the "For purposes of determining effluent discharge limits, the following conditions shall apply:" section. These provisions were misplaced and should be removed or relocated to provide clarity and comprehension.

Response Based on comments received from US EPA and other entities, proposed revisions removing the dissolved oxygen language, “For purposes of determining effluent discharge limits, the following conditions shall apply,” will not be removed from the rule. Proposed revisions removing permitting language, receiving water language, or discharge language from Rule 2 will not occur at this time. This language will remain in Rule 2 until adoption into Rule 6 has been approved by the APC&EC, Legislative Committees, and U.S. EPA.

Ozark Society

Comment: Page 5-3. “In streams with watersheds of less than 10 mi², it is assumed that insufficient water exists to support aquatic life during the critical season. During this time, a dissolved oxygen standard of 2 mg/L will apply to prevent nuisance conditions.” The first statement is dubious, one of your key indicator fish in the Arkansas River Valley is the red fin darter which has exactly these small streams as preferred habitat (see picture of red fin darters that were caught in a pool draining a headwater stream of 0.2 mi² two weeks ago in August). Whatever are the “nuisance conditions” that would be prevented by a 2mg/L limit (all fish dead) that would persist with a 3 mg/L limit, which would give green sunfish a chance of survival?

Response: The full text of the first paragraph for Rule 2.505 states:

In streams with watersheds of less than 10 mi², it is assumed that insufficient water exists to support a fishery during the critical season. During this time, a D.O. standard of 2 mg/l will apply to prevent nuisance conditions. However, field verification is required in areas suspected of having significant groundwater flows or enduring pools which may support unique aquatic biota. In such waters the critical season standard for the next size category of stream shall apply.

Thus, on a case-by-case basis, Rule 2.505 would apply different criteria to an enduring pool in a watershed of less than 10 mi² where field verification has indicated that aquatic life exists.

BWD

Comment: DEQ proposes to remove multiple provisions at the end of the DO criteria for Rivers and Streams. While the provisions to be deleted pertain to effluent discharge limits, they also contain substantive, protective criteria, including the maximum allowable magnitude of diurnal DO depression.

BWD objects to the deletion of the provisions at the end of the criteria for Rivers and Streams in Rule 2.505. The proposed deletions lack scientific justification and are inconsistent with the requirements of 40 C.F.R. 131.11.

Response: The effluent discharge limit language regarding dissolved oxygen will not be removed from Rule 2.505. DEQ will review the intent, development, and history of dissolved oxygen criteria to determine if revisions are appropriate in the future. Proposed revisions removing permitting language, receiving water language, or discharge language from Rule 2 will not occur at this time. This language will remain in Rule 2 until adoption into Rule 6 has been approved by the APC&EC, Legislative Committees, and U.S. EPA.

EPA, CAW

Comment: Multiple paragraphs at end of “Rivers and Streams” section were removed. Consistent with the EPA’s 4-part test for determining new or revised water quality standards (see FAQ #4 at <https://www.epa.gov/sites/production/files/2014-11/documents/cwa303faq.pdf>), these deletions have the effect of revising applicable water quality standards by removing provisions identifying an alternative criterion magnitude under varying temperature and/or flow conditions (identifies 6.5 mg/L as a criterion for determining limits, which was not otherwise listed in the preceding criteria table), as well as maximum allowable magnitude of diurnal DO depression (no more than 1 mg/L below applicable criteria) over a given duration (no more than 8 hours over 24 hours) necessary to support a designated use. To support these deletions, the state must submit supporting justification for why deleting these provisions are scientifically defensible and protective of the designated use in order for the EPA to approve them consistent with 40 CFR 131.5.

Response: The effluent discharge limit language regarding dissolved oxygen will not be removed from Rule 2.505. DEQ will review the intent, development, and history of dissolved oxygen criteria to determine if revisions are appropriate in the future. Proposed revisions removing permitting language, receiving water language, or discharge language from Rule 2 will not occur at this time. This language will remain in Rule 2 until adoption into Rule 6 has been approved by the APC&EC, Legislative Committees, and U.S. EPA.

EPA

Comment: Two paragraphs at end of “Lakes and Reservoirs” section were removed. 40 CFR 131.13 indicates that states “may, at their discretion, include in their State standards, policies generally affecting their application and implementation, such as mixing zones, low flows and variances.” The above language constitutes agency policy with respect to calculation of alternate permit limits where it can be demonstrated that this is appropriate. Such language does not constitute a water quality standard. The EPA supports this change. However, the EPA recommends that this and similar water quality implementation policy provisions be included in the state of Arkansas’s *Rule 6, Regulations for State Administration of the National Pollutant Discharge Elimination System (NPDES)*.

Response: Proposed revisions removing permitting language, receiving water language, or discharge language from Rule 2 will not occur at this time. This language will remain in Rule 2 until adoption into Rule 6 has been approved by the APC&EC, Legislative Committees, and U.S. EPA.

Comment: See comments for Reg. 2.502 above. The EPA supports this revision.

Response: DEQ will move forward with proposed revisions to remove “(applicable at 1.0 meter depth).”

Rule 2.507 Bacteria

BWD

Comment: DEQ proposed to delete the last sentence in the first paragraph of this section, which states, “No mixing zones are allowed for discharges of bacteria.”

BWD objects to this deletion until the same or more stringent language has been added to a revised Re. 6 that has received all necessary approvals, including that of the Governor, the

General Assembly, APCEC, and EPA.

Response: Proposed revisions removing permitting language, receiving water language, or discharge language from Rule 2 will not occur at this time. This language will remain in Rule 2 until adoption into Rule 6 has been approved by the APC&EC, Legislative Committees, and U.S. EPA.

Comment: EPA issued Recreational Water Quality Criteria (RWQC) recommendations regarding bacterial indicators on or about November 29, 2012. According to EPA, the recommended RWQC were based on the latest research and science, including “an extensive review of the available scientific literature and evaluation of new information from studies . . . and after public notice and comment . . .” See EPA RWOC, Office of Water Document 820-F-12-058, p.1 (2012).

BWD’s interest, of course, is in minimizing pathogens in our source water. The science regarding the protection of public health during primary contact recreation also supports BWD’s goal of protection of our drinking water source. BWD encourages DEQ to consider EPA’s recommended criteria in the 2012 EPA RWQC for primary contact recreation, including:

Enterococci: Culturable enterococci at a geometric mean (GM) of 30 colony forming units (CFU) per 100 milliliters (mL) and a statistical threshold value (STV) of 110 CFU per 100mL; and

Escherichia coli (E. coli): Culturable E. coli at a GM of 100 CFU per 100 mL and a STV of 320 CFU per 100mL; and

The waterbody GM should not be greater than the applicable GM magnitude in any 30-day interval. There should not be greater than a ten percent excursion frequency of the applicable STV magnitude in the same 30-day interval.

To the extent that the 2012 EPA RWOC for Bacteria are more protective and scientifically defensible than the Bacteria criteria in Rule 2.507, ADEQ should incorporate the appropriate, more-protective provisions into Rule 2.507

Response: The current criteria are more protective. Therefore, the Division has concluded that the proposed changes are unnecessary. The 2012 EPA Recreational Water Quality Criteria document gives two illness rates to choose from when determining the appropriate recreational criteria, an illness rate of 32 per 1,000 recreators and 36 per 1,000 recreators. The 36 per 1,000 corresponds to the equivalent illness rate in the 1986 recreational criteria document. The Division chose the 36 per 1,000 for consistency with multiple programs. With the chosen illness rate, DEQ’s current criteria are equivalent, geometric mean of 126 cfu per 100 mL, or more stringent than the 2012 criteria. The single sample magnitude for ORWs, lakes, and reservoirs, 298 cfu per 100 mL is more stringent than the 2012 single sample criterion of 410 cfu per 100 mL.

Comment: Rule 2.507 provides an allowable exceedance rate of twenty-five percent (25%). EPA’s 2012 RWQC document, on the other hand and for example, recommends that the geometric mean value for E. coli (and enterococci) not be exceeded in any 30-day interval. For the statistical threshold value for E. Coli (and enterococci), the 2012 EPA RWQC document also

recommends that there should not be greater than a ten percent (10%) excursion frequency in the same 30-day interval. See EPA RWQC, Office of Water Document 820-F0120058 (2012).

The allowable exceedance rate of twenty-five (25%) in Rule 2.507 should be deleted and replaced with a more protective and scientifically justifiable provision.

Response: The current criteria are more protective. Therefore, the Division has concluded that the proposed changes are unnecessary. While EPA's 2012 excursion rate is lower, the magnitude for the single sample is much higher than DEQ's current criteria for ERW, ESW, NSW, reservoirs, and lakes. Current pathogen standards in Rule 2.507, including the twenty-five percent (25%) exceedance rate for individual samples of pathogen data, are approved by EPA and the State of Arkansas and will remain in effect for this triennial review. The twenty-five percent (25%) exceedance rate is for individual sample analysis only, not a geometric mean. If any geometric mean, defined as at least five (5) samples taken within a thirty (30) day period, exceeds the numeric criteria, this is considered to be a violation of the criteria.

BRWA, Ozark Society, Fay Knox, Sandy Bernet, Shawn Porter, Larry and Marti Oelsen, Carol Storthz, Michael E. Kelly, Richard Osborne, Brenda Scheffler, Mark Smith, Chris Cristoffel, Beth Ardapple, Fran Alexander, Linda Stith

Comment: The BRWA & OS urges DEQ to revise its bacteria standard to be consistent with EPA's Recreational Water Quality Criteria. <https://www.epa.gov/sites/production/files/2015-10/documents/rec-factsheet-2012.pdf>. EPA's standards are much more protective of human health and should be incorporated into Regulation 2. By implementing EPA's Recreational Water Quality Criteria, DEQ is protecting the health of Arkansans and those who recreate in our state.

Logically and in support of the tourism industry, the OS supports extending the length of Primary Contact Season from March 15-October 31 due to increased tourism or local use in the early Spring (Spring Break) and well into the Fall season that has been made available by increased rainfall in September and October. Primary Contact Season should reflect the changing use patterns of human interaction with water and require increased safety standards for bacteria.

Response: The current criteria are more protective. Therefore, the Division has concluded that the proposed changes are unnecessary. The 2012 EPA Recreational Water Quality Criteria document gives two illness rates to choose from when determining the appropriate recreational criteria, an illness rate of 32 per 1,000 recreators and 36 per 1,000 recreators. The 36 per 1,000 corresponds to the equivalent illness rate in the 1986 recreational criteria document. The Division chose the 36 per 1,000 for consistency with multiple programs. With the chosen illness rate, DEQ's current criteria are equivalent, geometric mean of 126 cfu per 100 mL, or more stringent than the 2012 criteria. The single sample magnitude for ORWs, lakes, and reservoirs, 298 cfu per 100 mL is more stringent than the 2012 single sample criterion of 410 cfu per 100 mL. At this time, DEQ has not conducted the research necessary to evaluate extending the primary contact season.

Chuck Bitting

Comment: Remove fecal coliform

Response: The Division will review the appropriateness of the fecal coliform criteria.

IDEXX

Comment: We suggest removing the bacteria indicator of fecal coliforms included as an acceptable bacterium for the assessment of ambient waters, stated within Chapter 5, section 07 (2.507).

The rationale for the suggested edit is that *Escherichia Coli* (*E. coli*) are better indicators for fecal contamination versus fecal coliform, thus more protective to human health.

Fecal coliform bacteria are commonly identified as being thermotolerant bacteria (able to grow at 44.5 °C) [1]. Thermotolerant bacteria consists of *E. coli*, *Klebsiella*, *Enterobacter*, and *Citrobacter* species [1,2]. When testing for fecal coliforms, the population of the bacteria present can affect the fecal coliform results; for example, *Klebsiella*, *Enterobacter*, and *Citrobacter* species are false-positive indicators of fecal contamination as they are from nonfecal origin [2]. It has been found, up to 15% of *Klebsiella* (nonfecal origin) are thermotolerant and up to 10% of *E. coli* are not thermotolerant, thus potentially causing an error rate of 25% when testing for fecal coliforms [3]. *E. coli* are the only bacteria, of the coliform bacteria group, that come from the intestinal tract, have found to be more specific to the detection of fecal contamination and are the definitive indicator of fecal contamination in the U.S. Drinking water regulations [3,4] and are included as the EPA's recommended bacteria for recreational surface waters [5].

While we understand that changing a bacteria requirement could be beyond the scope of the current proposed changes to Regulation 2, we hope that the Department will consider removing the allowance of fecal coliforms as an acceptable indicator for the assessment of ambient waters to better protect public health. IDEXX appreciates the opportunity to provide this comment and looks forward to the next steps in the rule changing process.

Response: The Division will review the appropriateness of the fecal coliform criteria.

EPA

Comment: See comments regarding implementation of water quality standards in mixing zones for Reg. 2.404 above. The EPA supports this revision.

Response: Proposed revisions removing permitting language, receiving water language, or discharge language from Rule 2 will not occur at this time. This language will remain in Rule 2 until adoption into Rule 6 has been approved by the APC&EC, Legislative Committees, and U.S. EPA.

Comment: Insert "individual" in the second paragraph before "samples." The EPA supports this revision as it relates to the indicator *E. coli*.

Response: The Division acknowledges this comment.

Comment: Strike "2" as a footnote marker under the "Primary Contact" and "Secondary Contact" headings of the table for ERW, ESW, NSW, Reservoirs, Lakes. See comments for Reg. 2.502 above. Strike the footnote. See comments for Reg. 2.502 above. The EPA supports this revision. The EPA supports this revision.

Response: DEQ will move forward with proposed revisions to Strike "2" as a footnote marker under the "Primary Contact" and "Secondary Contact" headings of the table for ERW, ESW,

NSW, Reservoirs, Lakes. DEQ will move forward with proposed revisions to remove footnote “(applicable at 1.0 meter depth).”

EPA, CAW

Comment: Insert “Secondary contact use is assumed in all watersheds” in first paragraph. It’s not clear from the context when read in its entirety if this provision means that secondary contact only applies to all watersheds < 10 mi², or if secondary contact will apply to all watersheds regardless of size? Please explain.

Response: In Exhibit A – Rule 2 markup, the sentence inserted into the first paragraph of Rule 2.507 is “Secondary contact use is assumed in all watershed sizes.”

Comment: Insert “or fecal coliform” after “*E. coli*” in second paragraph. With regard to Recreational Water Quality Criteria (RWQC), the ADEQ has long used the indicator fecal coliform and associated criteria for the protection of primary contact use. The EPA has discouraged the use of total and fecal coliforms as indicators of fecal contamination since 1986 because they are not reliable indicators of illness to swimmers. As far back as 1986, the EPA clearly stated the Agency’s expectations for states to transition to indicators that are superior to fecal coliforms. In 1986 and again in 2012, the EPA, pursuant to CWA § 304(a), issued recommended RWQC to protect the public from exposure to harmful levels of pathogens while participating in primary contact recreation activities such as swimming. The EPA recommended RWQC are based on two bacterial indicators of fecal contamination - *E. coli* or enterococci in fresh waters, and enterococci in marine waters. As a result, the EPA recommends that the proposed revision be changed to “the below listed applicable criteria for *E. coli* shall not be exceeded...” and delete fecal coliform as an indicator from both the second paragraph the table of applicable criteria. It will be difficult for the EPA to approve a modification of a provision that includes such outdated indicator and criteria as protective of contact designated uses.

Response: Based on EPA’s comment, DEQ will remove the proposed phrase “or fecal coliform” from the second paragraph of Rule 2.507.

Comment: Footnote 5 – Strike “October 1 to April 30”. Replace with “Year-round.” Recommend that the primary and secondary contact timeframes be listed in 2.106 (Definitions) or 2.302 (Designated Uses).

Response: The Division’s position is that the appropriate location for this information is in Rule 2.507.

Rule 2.508 Toxic Substances

CAW

Comment: The first sentence of the first paragraph was amended as follows: “Toxic substances ~~shall not be present in receiving waters, after mixing, in such quantities as to be toxic that may cause toxicity~~ to human, animal, plant or aquatic life or to interfere with the normal propagation, growth and survival of the indigenous aquatic biota shall not be allowed into any waterbody.”

The removal of the phrase “in such quantities” from this provision may result in a broader interpretation than is may be expected. The new sentence in this provision indicates that toxic substances that may cause toxicity are not allowed in the water. This means that any detection of these substances may cause a violation. This could lead to the interpretation that no discharger

can have these components in their effluent because that would lead to detectible results which would be a violation.

Response: Proposed revisions removing permitting language, receiving water language, or discharge language from Rule 2 will not occur at this time. This language will remain in Rule 2 until adoption into Rule 6 has been approved by the APC&EC, Legislative Committees, and U.S. EPA.

CAW

Comment: 40 CFR § 131.20(a) was amended as part of the EPA's 2015 water quality standards regulation revision. The amended regulation requires any state that chooses not to adopt new or revised criteria for any parameters for which the EPA has published new or updated criteria recommendations under CWA § 304(a) to explain its decision when reporting the results of its triennial review to the EPA. The EPA's "Supplemental Information for Water Quality Standards Regulatory Revisions Final Rule: New or Updated CWA Section 304(a) Criteria Recommendations Published since May 30, 2000" (2015) provides a list of the new or updated CWA section 304(a) criteria recommendations published between May 30, 2000 and the publication of the EPA's 2015 water quality standards regulation revision. Please note that the more recently published national 304(a) recommended aquatic life criteria for cadmium (2016), selenium (2016 – Freshwater), aluminum (2018-Freshwater) and cyanotoxins (2019-Freshwater) are not listed in this table. ADEQ should evaluate these criteria recommendations and provide the required explanation for any updated federal criteria not adopted as part of this triennial review.

Response: DEQ evaluated these criteria recommendations and provided the required explanation in DEQ's § 304(a) criteria justification document (attached).

WRWK

Comment: EPA's 2015 revisions to 40cfr section 131.20a encourage states to update needed criteria and to avoid the need for federally promulgated regulations. That revised language was straightforward and stating that if the state does not adopt new or revised criteria for parameters for which EPA has published new or revised, new or updated clean water acts section 304a criteria recommendations, then the state shall provide an explanation when it submits the results of its triennial review to the regional administrator. While I know that it is not a federal requirement for states to provided their explanation to the public during the public participation process of the triennial review, with DEQ's continued statements regarding their commitment to transparency, it does leave one questioning why this information is not available now, as it would, it would greatly benefit the public's ability to meaningfully participate in the water quality standard revision process and be able to provide meaningful comments helping DEQ fulfill its charge of protecting, enhancing, and restoring the environment for Arkansans.

Response: DEQ evaluated these criteria recommendations and provided the required explanation in DEQ's § 304(a) criteria justification document (attached).

BWD

Comment: The first sentence in the first paragraph of this section is proposed to state: "Toxic substances that may cause toxicity to human, animal, plant or aquatic biota or interfere with normal propagation, growth, and survival of aquatic biota shall not be allowed into any waterbody."

BWD supports this proposed revision, although the deleted portion of the section suffers from the same problem outlined in Comments about Rule 6.

Response: Proposed revisions removing permitting language, receiving water language, or discharge language from Rule 2 will not occur at this time. This language will remain in Rule 2 until adoption into Rule 6 has been approved by the APC&EC, Legislative Committees, and U.S. EPA.

Comment: EPA has published new and updated national recommended Toxics criteria for parameters, including for Cyanotoxins, that are not listed in Rule 2.508. Forty C.F.R. 131.20(a) requires DEQ to either adopt its own criteria for the parameters for which EPA has issued criteria recommendations or provide an explanation for its failure to do so as part of its Triennial Review.

DEQ should include criteria in Rule 2.508 for the missing parameters, especially for Cyanotoxins (Microcystins and Cylindrospermopsin).

Response: DEQ evaluated these criteria recommendations and provided the required explanation in DEQ's § 304(a) criteria justification document (attached).

EPA

Comment: The first sentence of the first paragraph was amended as follows:

~~“Toxic substances shall not be present in receiving waters, after mixing, in such quantities as to be toxic that may cause toxicity to human, animal, plant or aquatic life or to interfere with the normal propagation, growth and survival of the indigenous aquatic biota shall not be allowed into any waterbody.”~~ The removal of the phrase “in such quantities” from this provision may result in a more sweeping interpretation than is perhaps expected. The new sentence in this provision indicates that toxic substances that may cause toxicity are not allowed in the water. This means that any detection of these substances may cause a violation. This could lead to the interpretation that no discharger can have these components in their effluent because that would lead to detectible results which would be a violation.

Response: Proposed revisions removing permitting language, receiving water language, or discharge language from Rule 2 will not occur at this time. This language will remain in Rule 2 until adoption into Rule 6 has been approved by the APC&EC, Legislative Committees, and U.S. EPA.

EPA

Comment: The second through fifth sentences. See comments regarding inclusion of implementation language in water quality standards, including its relationship to mixing zones, for Reg. 2.404 above. The EPA supports this revision.

Response: Proposed revisions removing permitting language, receiving water language, or discharge language from Rule 2 will not occur at this time. This language will remain in Rule 2 until adoption into Rule 6 has been approved by the APC&EC, Legislative Committees, and U.S. EPA.

EPA

Comment: 40 CFR § 131.20(a) was amended as part of the EPA's 2015 water quality standards regulation revision. The amended regulation requires any state that chooses not to adopt new or revised criteria for any parameters for which the EPA has published new or updated criteria recommendations under CWA § 304(a) to explain its decision when reporting the results of its triennial review to the EPA. The goal of this revised provision is to ensure public transparency about state water quality standards decisions. The EPA is including this item as a reminder to include this information, if applicable, in any triennial review submittal to the EPA. The EPA's _____ "Supplemental Information for Water Quality Standards Regulatory Revisions Final Rule: New or Updated CWA Section 304(a) Criteria Recommendations Published since May 30, 2000" (2015) provides a list of the new or updated CWA section 304(a) criteria recommendations published between May 30, 2000 and the publication of the EPA's 2015 water quality standards regulation revision. Please note that the more recently published national 304(a) recommended aquatic life criteria for cadmium (2016), selenium (2016 – Freshwater), aluminum (2018-Freshwater) and cyanotoxins (2019-Freshwater) are not listed in this table.

ADEQ should evaluate these criteria recommendations and provide the required explanation for any updated federal criteria not adopted as part of this triennial review. There is no required format in which to provide these explanations. However, two examples have been provided (**Attachment 3**) from another Region 6 state that may be helpful as an example.

Response: DEQ evaluated these criteria recommendations and provided the required explanation in DEQ's § 304(a) criteria justification document (attached).

EPA, CAW

Comment: A footnote provided for the "Dissolved Metals" table indicates that "These values may be adjusted by a site-specific Water Effects Ratio (WER)". Please note that the Biotic Ligand Model (BLM) has been the EPA's recommended approach for developing site-specific criteria for copper since 2007. This approach is currently in development for various other metals as well. While the EPA will consider criteria based on a water effect ratio (WER), we will use the EPA's missing parameters guidance to run a BLM if it is not otherwise provided. The EPA will defer to the more protective criteria based on either the WER or BLM approach. As noted in our previous comment on Reg. 2.308, the EPA no longer recommends use of WERs for aluminum given the difficulty in keeping it dissolved in solution at the level that will generate a LC50 for a WER study. As noted previously, Reg. 2 does not include aquatic life criteria for aluminum.

Response: The Division acknowledges EPA's recommendation of the BLM approach over the WER approach for copper and the exclusion of aluminum WERs. However, the footnote is specific to 40 C.F.R. § 131.36(c), which references water-effects ratios. DEQ notes that, pursuant to Rule 2.308(A)(3) and 40 C.F.R. § 131.11, BLM may be used for developing site-specific criteria because BLM is a scientifically defensible method. Regarding aluminum criteria, DEQ evaluated these criteria recommendations and provided the required explanation in DEQ's § 304(a) criteria justification document (attached).

Rule 2.509 Nutrients

BRWA, Ozark Society, Fay Knox, Sandy Bernet, Shawn Porter, Carol Storthz, Michael E. Kelly, Richard Osborne, Brenda Scheffler, Larry and Marti Olsen, Mark Smith, Chris Cristoffel, Beth

Ardapple, Fran Alexander, Linda Stith

Comment: “Materials stimulating algal growth shall not be present in concentrations sufficient to cause objectionable algal densities or other nuisance aquatic vegetation or otherwise impair any designated use of the waterbody.”

The BRWA & OS strongly supports the immediate implementation of numeric nutrient criteria for phosphorous and nitrogen. The current language is ambiguous, insufficient, not protective to Arkansas’ water quality and allows for degradation of Extraordinary Resource Waters and other Tier III waters. In 2018, the Buffalo National River experienced a 90-mile long algal bloom. In previous years, the bloom was estimated to be 30 and 50 miles long respectively. Clearly these regulations are not providing water quality protection for the nation’s first national river and are wholly inadequate. Both Oklahoma and Missouri, bordering states, have numeric nutrient criteria for phosphorous. The Oklahoma limit for TP on wild and scenic rivers is 0.037 mg/L. This limit was recommended by joint scientific work by Oklahoma and Arkansas stream scientists on the Illinois River and could serve as a beginning point for all wild and scenic rivers in Arkansas.

Response: Water quality criteria can include narrative statements. (See 40 C.F.R. § 131.3(b).) Nutrient water column concentrations do not always correlate directly with stream impairments. In certain waters DEQ has implemented protections, via phosphorus permit limits, based on the current narrative criteria in waterbodies where studies have shown that excess nutrients are present. Likewise, other water chemistry and biological data (dissolved oxygen, diurnal dissolved oxygen, pH, and aquatic-life data) helped point to and ultimately supported nutrient impairment in such waterbodies. The current adopted narrative criteria are protective of aquatic life.

DEQ is in the process of developing criteria for waterbodies following the process outlined in the State of Arkansas Nutrient Criteria Development Plan, 2012. EPA has agreed with DEQ’s plan. DEQ is continuing the ecoregion projects as well as other projects with EPA to develop appropriate and protective criteria.

Arkansas Game and fish Commission (AGFC)

Comment: For more than two decades the US EPA has been providing guidance on how to properly develop scientifically defensible numeric nutrient criteria for the protection of the most sensitive beneficial uses (EPA 2000, EPA 2020). The AGFC recognizes DEQ’ s ecoregion approach and data collection efforts reported in Part III, Chapter Five of the 2018 Integrated Water Quality Monitoring Report. The DEQ reports data collected from Extraordinary Resource Waters (ERWs) were comparable to EPA Level III Aggregated Ecoregion values.

Until such time that the DEQ has completed thorough analysis and vetting of its completed stressor-response studies for all ecoregions, the AGFC encourages use of the 2002 EPA Level III Aggregated Ecoregion values for rivers and streams. Similarly, the EPA recently released updated values for lakes and reservoirs (EPA 2020). As the AGFC owns nearly 20,000 acres and manages fisheries for all the nearly 300,000 acres of significant publically owned waters in the state, we strongly support the DEQ promulgating US EPA recommended values until such a time that the DEQ can present site-specific or regional numeric nutrient criteria for the protection of reservoir beneficial uses.

Response: Water quality criteria can include narrative statements. (See 40 C.F.R. § 131.3(b).) Nutrient water column concentrations do not always correlate directly with stream impairments. In certain waters DEQ has implemented protections, via phosphorus permit limits, based on the

current narrative criteria in waterbodies where studies have shown that excess nutrients are present. Likewise, other water chemistry and biological data (dissolved oxygen, diurnal dissolved oxygen, pH, and aquatic-life data) helped point to and ultimately supported nutrient impairment in such waterbodies. The current adopted narrative criteria are protective of aquatic life.

DEQ is in the process of developing criteria for waterbodies following the process outlined in the State of Arkansas Nutrient Criteria Development Plan, 2012. EPA has agreed with DEQ's plan. DEQ is continuing the ecoregion projects as well as other projects with EPA to develop appropriate and protective criteria.

BWD

Comment: DEQ proposes to remove the Reg. 2.509 numeric phosphorus requirements for point source discharges into certain waterbodies in the legislatively designated nutrient surplus watersheds and on Arkansas's list of impaired waterbodies (the so-called, "303(d) List"). The Beaver Lake watershed was declared to be a Nutrient Surplus Area by Act 1061 of 2003 (codified at Ark. Code Ann. 15-20-1104). The Reg. 2.509 numeric phosphorus requirements have been an important tool in limiting nutrient loadings to Beaver Lake. Discharges of nutrient-containing wastewater into the Beaver Lake watershed have the potential to adversely impact the Lake's water quality and can have a direct bearing on what it costs BWD to provide our customers with drinking water that meets or exceeds all federal and state regulatory requirements.

Before the numeric phosphorus requirements are deleted from Rule 2.509, the same or more stringent requirements must be included in a revised Reg. 6 that has received all necessary approvals, including that of the Governor, the General Assembly, APCEC, and EPA. The failures to do this would likely result, among other things, in objections to and appeals of NPDES permits containing terms and conditions based on these provisions that are no longer contained in any effective regulation.

Response: Proposed revisions removing permitting language, receiving water language, or discharge language from Rule 2 will not occur at this time. This language will remain in Rule 2 until adoption into Rule 6 has been approved by the APC&EC, Legislative Committees, and U.S. EPA.

Comment: DEQ has long promised that ambient, numeric phosphorus and other nutrient criteria would be added to Rule 2. EPA issued recommended ambient, numeric nutrient criteria in 2000, and it recently proposed new statistical models for deriving numeric nutrient criteria for Lakes and Reservoirs. While BWD does not necessarily endorse the new models, they could provide tools for states to use, in conjunction with the 2000 recommended nutrient criteria, in the development of numeric nutrient criteria. Both appear to be unnecessary, however, for DEQ's issuance of proposed numeric nutrient criteria for the Ozark Highlands and Boston Mountains Ecoregions. The Associate Director of the DEQ Office of Water acknowledged during the recent 2020 AIM Stakeholder Workgroup meetings that DEQ has completed the work on its own numeric nutrient criteria for these two Ecoregions. Instead of proposing these criteria for inclusion in Rule 2 at this time or soon, though, DEQ has decided to wait until it has developed

numeric nutrient criteria for all six of the State's Ecoregions.

BWD recognizes that it is a complex task to develop appropriate numeric nutrient criteria. BWD objects, however, to DEQ's ongoing delay in the issuance of proposed numeric nutrient criteria. The criteria for the Ozark Highlands and Boston Mountains Ecoregions, or for a combination of the two Ecoregions should be proposed for inclusion in Rule 2.509 either now or soon. Enforceable, numeric nutrient criteria are needed, among other things, to control harmful algal blooms, cyanotoxins, hypoxia, eutrophication, and problems related to disinfection by-products and unpleasant tastes and odors in drinking water.

Response: DEQ is in the process of developing criteria for waterbodies following the process outlined in the State of Arkansas Nutrient Criteria Development Plan, 2012. EPA has agreed with DEQ's plan. DEQ is continuing the ecoregion projects as well as other projects with EPA to develop appropriate and protective criteria.

Rule 2.509(A)

EPA, CAW

Comment: This rule states: "Materials stimulating algal growth shall not be present in concentrations sufficient to cause objectionable algal densities or other nuisance aquatic vegetation or otherwise impair any designated use of the waterbody." Does the phrase "any designated use of the waterbody" mean that nutrients can be used to determine support for any of the listed designated uses in Rule 2.302?

Response: The phrase "any designated use of the waterbody" refers to the uses identified by Rule 2.302.

Rule 2.509(B)

CAW

Comment: The last two paragraphs and table were removed from this section as follows: "~~All point source discharges into the watershed of waters officially listed on Arkansas's impaired waterbody list (303(d)) with phosphorus as the major cause shall have monthly average discharge permit limits no greater than those listed below. Additionally, waters in nutrient surplus watersheds as determined by Act 1061 of 2003 Regular Session of the Arkansas 84th General Assembly as set forth in Ark. Code Ann. § 15-20-1104, and subsequently designated nutrient surplus watersheds may be included under this Reg. Rule if point source discharges are shown to provide a significant phosphorus contribution to waters within the listed nutrient surplus watersheds.~~

~~For discharges from point sources which are greater than 15 mgd, reduction of phosphorus below 1 mg/L may be required based on the magnitude of the phosphorus load (mass) and the type of downstream waterbodies (e.g., reservoirs, Extraordinary Resource Waters). Additionally, any limits listed above may be further reduced if it is determined that these values are causing impairments to special waters such as domestic water supplies, lakes or reservoirs, or Extraordinary Resource Waters.~~

The deleted language describes permit limits for total phosphorus that are not water quality criteria, and do not appear to directly implement nutrient-related criteria (chlorophyll a and Secchi depth) found in the water quality standards. These are design flow-based limits implemented when total phosphorus is identified as a cause of impairment in waters to which a

point source discharge occurs. This revision is supported; however, it should be noted that the state's CPP also refers to this provision. Is this being incorporated into Rule 6? If so, the CPP reference needs to be updated. Since Regulation 2, the CPP, and the states antidegradation policy are intrinsically integrated, efforts should be made to be certain that the language is consistent across the documents.

Response: Proposed revisions removing permitting language, receiving water language, or discharge language from Rule 2 will not occur at this time. This language will remain in Rule 2 until adoption into Rule 6 has been approved by the APC&EC, Legislative Committees, and U.S. EPA.

EPA

Comment: The deleted language describes permit limits for total phosphorus that are not water quality criteria, and do not appear to directly implement nutrient-related criteria (chlorophyll a and Secchi depth) found in the water quality standards. These are design flow-based limits implemented when total phosphorus is identified as a cause of impairment in waters to which a point source discharge occurs. The EPA supports this revision. However, please note that the state's CPP refers to this provision. Is this being incorporated into Rule 6? If so, the CPP reference needs to be updated.

Response: Proposed revisions removing permitting language, receiving water language, or discharge language from Rule 2 will not occur at this time. This language will remain in Rule 2 until adoption into Rule 6 has been approved by the APC&EC, Legislative Committees, and U.S. EPA.

Rule 2.510 Oil & Grease

BWD

Comment: DEQ proposes to delete the last sentence of Rule 2.510, which states that, "No mixing zones are allowed for discharges of oil and grease."

BWD objects to this deletion until the same or more stringent language has been added to a revised Reg. 6 that has received all necessary approvals, including that of the Governor, the General Assembly, APCEC, and EPA.

Response: Proposed revisions removing permitting language, receiving water language, or discharge language from Rule 2 will not occur at this time. This language will remain in Rule 2 until adoption into Rule 6 has been approved by the APC&EC, Legislative Committees, and U.S. EPA.

EPA

Comment: Specification of applicability of oil and grease water quality standards to all waters of the state, rather than only receiving waters, is acceptable.

Response: The Division acknowledges this comment.

EPA

Comment: See comments regarding inclusion of implementation language in water quality standards, including as it may relate to mixing zones, for Reg. 2.404 above. The EPA supports this revision. As noted in our prior comment to Reg. 2.410, we recommend replacing the term "associated biota" with "aquatic life" or define the term "associated biota".

Response: Proposed revisions removing permitting language, receiving water language, or discharge language from Rule 2 will not occur at this time. This language will remain in Rule 2 until adoption into Rule 6 has been approved by the APC&EC, Legislative Committees, and U.S. EPA.

Rule 2.511(A) Mineral Quality, Site Specific Mineral Quality Criteria
BWD

Comment: The formatting and order of listed stream segments for the White River from the headwaters to the Missouri state line has been revised.

BWD suggests that the listing for the Kings River be moved to reflect that its confluence with the White River is downstream of the other listed stream segments for the portion of the White River (including Beaver Reservoir) between the Missouri state line and WHI0052.

Also, the line, “White River (Missouri state line, including Beaver Reservoir)(to WHI0052)” probably should be revised to be, “White River (Missouri state line to WHI0052, including Beaver Reservoir).”

Response: The White River section referenced will be revised to state, “White River (WHI0052 to Missouri state line, including Beaver Reservoir).” Kings River will be moved to reflect that it flows into the above section of the White River downstream of Holman Creek.

EPA

Comment: In its 2007 triennial “Phase II” revisions, the Commission revised Reg. 2.511(A) adding and striking the following language (denoted by underline/strikeout text):

“Mineral quality shall not be altered by municipal, industrial, other waste discharges or instream activities so as to interfere with designated uses. The following limits apply to the streams indicated and represent the monthly average concentrations of chloride (Cl⁻), sulfate (SO₄²⁻) and total dissolved solids (TDS) ~~not to be exceeded in more than one (1) in ten (10) samples collected over a period of not less than 30 days or more than 360 days.~~”

As detailed in its January 24, 2008 action and supporting TSD, the EPA disapproved the striking of language referring to exceedance rates based on a lack of supporting documentation as required by 40 CFR 131.6 (b) and (f) and methods, including methods and analysis conducted that would allow the EPA to determine the adequacy and scientific basis for this revision. The EPA specified in that action that the previously approved language in Reg. 2 (April 23, 2004) remains in effect for CWA purposes. The ADEQ’s Assessment Methodology (2018) specifies that site-specific mineral criteria listed in Reg. 2.511(A) means that assessments must be based on a monthly average of site-specific values for chlorides, sulfates, and/or TDS not to be exceeded in more than one (1) in ten (10) samples collected over not less than 30 days or more than 360 days. Given that the EPA disapproved the removal of the language specified above, using the 2018 Assessment Methodology as currently written is inconsistent with Reg. 2.511(A) given that this language remains in effective for CWA purposes.

Response: In EPA’s October 31, 2016 TSD, EPA approved these revisions to Rule 2.502, Rule 2.504, Rule 2.505, Rule 2.508, Rule 2.510, and Rules 2.511(A) with the following statement:

EPA is approving those instances where the state has struck absolute maxima or

minima language in the provision identified above pursuant to CWA §303(c) and its implementing regulations at 40 CFR § 131. EPA recommends that the state develop scientifically supportable frequency and duration components for applicable criteria and include those components in its WQS or reference the state's Assessment Methodology or CPP in the WQS.

EPA defined duration and frequency as follows:

The frequency entails a certain percentage of exceedances that must occur to list waters as impaired. The duration component entails the period of record for which data is to be assessed.

After acknowledging that APC&EC had removed statements of frequency and duration from those sections, EPA stated that it was committed to working with DEQ to develop frequency and duration components that could be part of the water quality standard or adopted by binding reference.

EPA approved Arkansas's 2018 impaired waterbodies list that was prepared using the following methodology:

"Stream, river, reservoir, and lake AUs with site specific mineral criteria will be assessed as non-support when, using the twenty-five percent exceedance rate within Table 2, greater than or equal to the minimum number of samples for the entire qualifying data set exceed the applicable site specific mineral criteria listed in APC&EC Reg. 2.511(A)."

DEQ is committed to developing revised dissolved mineral criteria. DEQ is currently collaborating with EPA Office of Research and Development (ORD) on a Regional Applied Research Efforts (RARE) proposal regarding mineral data.

EPA

Comment: Bayou Meto: The proposed revisions are specific to "Bayou Meto to Pulaski/Lonoke county line" and "Bayou Meto (Pulaski/Lonoke county line)." These revisions do not include Bayou Two Prairie. As a result, the EPA does not have any concerns with revising these descriptors in Reg. 2.511(A). The two following entries that specify the exclusion of those portions of Bayou Two Prairie that have the ERW designated use and appear consistent with the EPA's August 5, 2008 action disapproving site-specific chloride and sulfate criteria applicable to Bayou Two Prairie adjacent to the Smoke Hole Natural Area as inconsistent with 40 CFR § 131.12(a)(3). The ecoregion criteria of 48 mg/L and 37.3 mg/L for chloride continue to apply to the portion of Bayou Two Prairie adjacent to Smoke Hole Natural Area.

Response: The Division acknowledges that Bayou Two Prairie, adjacent to the Smoke Hole Natural Area, does not have site specific minerals criteria. The Division also acknowledges that 36 mg/L for chloride, 28 mg/L for sulfates and 390 mg/L for total dissolved solids are the ecoregion reference stream values for the Delta ecoregion in Rule 2.511(B).

EPA

Comment: Please strike "†" on all values for Poteau River from confluence of Unnamed trib to Scott County Road 59 and Unnamed trib from Tyson-Waldron Outfall 001 to confluence with

the Poteau River. The listed criteria were approved by the EPA on June 2, 2020 and are now applicable for CWA purposes.

Response: The “†” footnote indicator will be removed from the Poteau River and Unnamed Tributary entries.

Comment: Please update the sulfate criterion for Stennitt Creek from Brushy Creek to Spring River to reflect that approved by the EPA on June 3, 2020 (43mg/L). Similarly, please update the table in this provision to reflect those minerals criteria approved on the same date for Unnamed Tributary of Brushy Creek from Vulcan Construction Materials Outfall 001 to Brushy Creek and Brushy Creek from Unnamed Tributary to Stennitt Creek.

Response: The Stennitt Creek revised TDS and sulfate criteria will be added to the final rule. Additionally, the Brushy Creek and Unnamed Tributary revised mineral criteria will be added to the final rule.

Comment: Please strike “†” on all values for Town Branch from Point of Discharge of the Huntsville WWTP downstream to the confluence with Holman Creek and Holman Creek from the confluence with Town Branch downstream to the confluence with War Eagle Creek. The listed criteria were approved by the EPA on May 22, 2020 and are now applicable for CWA purposes.

Response: The “†” footnote indicator will be removed from the Town Branch and Holman Creek entries.

Department of Environmental Quality (DEQ)

Comment: The following third party rulemaking was approved after development of the Triennial Review draft Rule 2 and should be included:

Stennitt Creek from Brushy Creek to Spring River ER 43.3 456*

Brushy Creek from Unnamed Tributary to Stennitt Creek ER 126 549

Unnamed Tributary from Vulcan Outfall 001 to Brushy Creek ER 260 725

On January 24, 2020, the APC&EC approved adoption of the above amendments to Rule 2. On June 4, 2020, EPA Region 6 via letter and corresponding Technical Support Document, approved these site specific criteria proposed by Vulcan Construction Materials, LLC.

Response: Site specific mineral criteria for Stennitt Creek, Brushy Creek, and Unnamed Tributary will be included in the final rule.

Comment: Remove the † that corresponds to the footnote “† Not applicable for Clean Water Act purposes until approved by EPA.” from the following site specific mineral criteria:

Holman Creek from the confluence with Town Branch downstream to the confluence with War Eagle Creek 180† 48† 621†

Town Branch from point of discharge of the City of Huntsville WWTP downstream to the confluence with Holman Creek 223† 61† 779†

On May 22, 2020, EPA Region 6 via letter and corresponding Technical Support Document approved these site specific criteria proposed by the City of Huntsville.

Poteau River from confluence of Unnamed trib to Scott County Road 59 185† 200† 786†

Unnamed trib from Tyson-Waldron Outfall 001 to confluence with the Poteau River 180† 200† 870†

On June 2, 2020, EPA Region 6 via letter and corresponding Technical Support Document approved these site specific criteria proposed by Tyson Foods, Inc. – Waldron Plant.

Response: “†” will be removed from the above-noted site specific mineral criteria.

Rule 2.511(B) Mineral Quality, Ecoregion Reference Stream Minerals Values

BWD

Comment: This provision has long been one of the more controversial sections of Reg. 2. BWD recognizes the practical complications that flow from the Ecoregion numbers being water quality criteria, as well as the reasons for interim relief from the criteria. BWD remains optimistic that a workable and legally sufficient resolution will be adopted pursuant to the 2017 DEQ Mineral Criteria Development Strategy.

For the record, however, BWD restates what it has said in previous comments on Reg. 2.511(B): The numbers in the Table in Reg. 2.511(B) were originally adopted by APCEC and approved by EPA as water quality criteria applicable to streams and other waterbodies in the various numbers across-the-board as water quality criteria has not been undertaken.

Response: DEQ is currently collaborating with EPA ORD on a Regional Applied Research Efforts (RARE) proposal regarding mineral data.

EPA

Comment: Amended the following sentence as follows: “The values listed in the table below are not intended nor will these values to be used by the Department Division to evaluate attainment of the water quality standards for assessment purposes. In its August 31, 2016 action the EPA did not approve certain portions of Reg. 2.511(B) including the entire sentence referred to. Based on that action, this sentence is not, nor has it ever been, effective for CWA purposes. The EPA approved the criteria referred to as “values” as water quality standards pursuant to the CWA §303(c) and they are effective for CWA purposes. The criteria themselves were based on the significant work that the ADEQ did in the development of its Physical, Chemical, and Biological Characteristics of Least-Disturbed Streams in Arkansas’s Ecoregions, Vol. 2 and 2 (ADEQ, 1987). The stated purpose of these documents was to provide a sound scientific basis for the development, review, and adoption of water quality standards.

The EPA looks forward to continuing its work with ADEQ to implement its October 27, 2017 Mineral Criteria Development Strategy, including upcoming milestones of presenting proposed revised mineral criteria to the Mineral Stakeholder workgroup and presenting proposed multi-metric biological indices (IBI) and tiered aquatic life uses (TALU) for the Ouachita Mountain ecoregion and expanding this effort in other ecoregions. The EPA also considers the collaborative effort in the current NSTEPS project, as well as RARE project related to conductivity, to be promising.

Response: DEQ is committed to developing revised dissolved mineral criteria. DEQ is currently collaborating with EPA Office of Research and Development (ORD) on a Regional Applied Research Efforts (RARE) proposal regarding mineral data.

Rule 2.511 (C) Mineral Quality – Domestic Water Supply Criteria

EPA

Comment See comments for Reg. 2.502 above. The EPA supports this revision.

Response: The Division acknowledges this comment.

Rule 2.511 Mineral Quality

AGFC

Comment: The AGFC has concerns for protection of aquatic life designated uses and protection of Outstanding Resource Waterbodies designated uses for waterbodies not designated in Rule 2.511 (A). Table-3 of the 2020 Assessment Methodology for the Preparation of the 2020 Integrated Water Quality Monitoring and Assessment Report indicates that Rule 2.511(A) and (C) are intended to be protective of both Outstanding Resource Waterbodies (Rule 2.302 (A-C) and Aquatic Life (Rule 2.302(F)). However, approximately half of Extraordinary Resource Waters (ERWs) are excluded from Rule 2.511(A) and more than half of the Ecologically Sensitive Waterbodies (ESWs) are excluded as well. While the focus of these comments are on proposed actions on Rule 2, the Assessment Methodology and revisions to Rule 2 are inevitably comingled. The AGFC proposes that DEQ, whilst developing appropriate criteria for all waters or, more appropriately applying Ecoregion Values (Rule 2.511(B)) to all other waters as denoted by EPA's 2007 Record of Decision, should consider promulgating site-specific criteria for all remaining ERWs and ESWs. However, if DEQ opts for not developing new site-specific criteria, additional revisions to the assessment methodology should be considered to provide ample protection of these designated uses.

To further expand upon utilizing Rule 2.511 (B) Ecoregion Values for the protection of aquatic life in ERWs, ESWs, and all other waterbodies deemed to be high quality, the AGFC agrees with the US EPA 2007 Record of Decision (ROD) and 2016 ROD on DEQ's 2013 Triennial Review that Arkansas has naturally low ionic mineral concentrations (Griffith 2014). Endemic, rare, threatened, and endangered species that inhabit these waterbodies have adapted to low ionic concentrations. Recent literature supports that increased ionic stress can greatly reduce biological diversity (Cormier et al. 2013, Cormier and Zheng 2018). The DEQ's long-term plan includes development of tiered aquatic life designated uses (ADEQ 2018), which the AGFC is supportive of. However, the timeline provided to stakeholders at the onset of the 2018 Triennial Review process extends criteria development to nearly 2030. This would ultimately allow another decade or more before protective mineral criteria are established for all other waters. Therefore, the AGFC supports addition of protective criteria to 2.511(A) for protection of ERWs, ESWs, as well as the adoption of 2.511(B) as criteria for the protection of aquatic life designated uses until such time that other reasonable criteria are established.

Response: All ERW and ESWs are not included in Rule 2.511(A) because site specific mineral criteria have not been developed for all of those waterbodies. As noted, DEQ is in the process of developing minerals criteria. DEQ is currently collaborating with EPA ORD on a Regional Applied Research Efforts (RARE) proposal regarding mineral data.

Rule 2.512 (D) Ammonia

EPA, CAW

Comment: This provision described the criteria (and their seasonality) being used as a basis for calculating permit limits but did not specifically describe how these calculations would be made, nor changed the protectiveness of the criteria. This provision is not a water quality standard. See

comments regarding inclusion of implementation language in water quality standards for Reg. 2.404 above. The EPA supports this revision. However, the removal of the first sentence creates some uncertainty as to what pH and temperature are being used for: the determination of ammonia criteria for assessment as well as the derivation of permit limits? This should be clarified. Also, the EPA requests more information about how the pH data are obtained. When was the last time data were collected to determine the ecoregion mean value?

Response: Temperature and pH data are used when DEQ assesses attainment of ammonia criteria as well as the derivation of permit limits. When assessing attainment of ammonia criteria, paired in-situ temperature and pH data are used. According to the State of Arkansas CPP, “The following tables [4-10A, 4-10B, 4-11A, 4-11B] provide instream ammonia criteria (after mixing) that were calculated using default values of pH and temperature for different ecoregions and different seasons. Alternative site-specific pH and temperature data may be considered on a case-by-case basis after this data has been submitted to DEQ for review and approval.” Ecoregion mean values in the current CPP were derived from the 1987 Ecoregion Reference Streams study. DEQ acknowledges that the entirety of Rule 2.512(D) should be considered as a whole. Therefore, the remaining text “Temperature values used will be 14° C when fish early life stages are absent and the ecoregion temperature standard for the season when fish early life stages are present.

Appendix A

CAW

Comment: The following footnotes were removed from the Site-Specific Criteria Variations tables for each ecoregion:

“*Increase over natural temperatures may not be more than 2.8°C (5°F).

**At water temperatures ≤ 10°C or during March, April and May when stream flows are 15 cfs and greater, the primary season dissolved oxygen standard will be 6.5 mg/L. When water temperatures exceed 22°C, the critical season dissolved oxygen standard may be depressed by 1 mg/L for no more than 8 hours during a 24-hour period.”

For the deleted temperature provision: these deletions have the effect of revising applicable water quality standards by removing provisions identifying the magnitude (variability above background) of criteria necessary to support a designated use. The state should provide a justification supporting these deletions, as to why these deletions are scientifically defensible and protective of the designated uses.

For the deleted DO provision: these deletions have the effect of revising applicable water quality standards by removing provisions identifying an alternative criterion magnitude under varying temperature and/or flow conditions (identifies 6.5 mg/L as a criterion, which was not otherwise listed in the preceding criteria table in Rule 2.505), as well as maximum allowable magnitude of diurnal DO depression (no more than 1 mg/L below applicable criteria) over a given duration (no more than 8 hours over 24 hours) necessary to support a designated use. The state should provide a justification supporting these deletions, as to why these deletions are scientifically defensible and protective of the designated uses.

Response: Temperature and dissolved oxygen footnotes will not be removed from the Site Specific Criteria Variations tables for each ecoregion in Appendix A. DEQ will review the

intent, development, and history of temperature and dissolved oxygen criteria to determine if revisions are appropriate in the future. Proposed revisions removing permitting language, receiving water language, or discharge language from Rule 2 will not occur at this time. This language will remain in Rule 2 until adoption into Rule 6 has been approved by the APC&EC, Legislative Committees, and U.S. EPA.

EPA

Comment: The following footnotes were removed from the Site Specific Criteria Variations tables for each ecoregion: For the deleted temperature provision: consistent with the EPA's 4-part test for determining new or revised water quality standards (see FAQ #4 at <https://www.epa.gov/sites/production/files/2014-11/documents/cwa303faq.pdf>), these deletions have the effect of revising applicable water quality standards by removing provisions identifying the magnitude (variability above background) of criteria necessary to support a designated use. To support these deletions, the EPA would need as part of the state's submission a supporting justification for why deleting these provisions is scientifically defensible and protective of the designated use in order to approve them.

For the deleted DO provision: consistent with the EPA's 4-part test for determining new or revised water quality standards (see FAQ #4 at <https://www.epa.gov/sites/production/files/2014-11/documents/cwa303faq.pdf>), these deletions have the effect of revising applicable water quality standards by removing provisions identifying an alternative criterion magnitude under varying temperature and/or flow conditions (identifies 6.5 mg/L as a criterion, which was not otherwise listed in the preceding criteria table in Rule 2.505), as well as maximum allowable magnitude of diurnal DO depression (no more than 1 mg/L below applicable criteria) over a given duration (no more than 8 hours over 24 hours) necessary to support a designated use. To support these deletions, the EPA would need as part of the state's submission a supporting justification for why deleting these provisions is scientifically defensible and protective of the designated use in order to approve them.

Response: Temperature and dissolved oxygen footnotes will not be removed from the Site Specific Criteria Variations tables for each ecoregion in Appendix A. DEQ will review the intent, development, and history of temperature and dissolved oxygen criteria to determine if revisions are appropriate in the future. Proposed revisions removing permitting language, receiving water language, or discharge language from Rule 2 will not occur at this time. This language will remain in Rule 2 until adoption into Rule 6 has been approved by the APC&EC, Legislative Committees, and U.S. EPA.

Appendix A - Site Specific Designated Use Variations for Ozark Highlands Table

EPA

Comment: The footnote states "† Not applicable for clean water act purposes until approved by EPA." Please note that the EPA approved the removal of the Domestic Water Supply Uses for both Holman Creek and Town Branch on May 22, 2020. This footnote, and the "†" symbols, can be removed from this table. In addition, the EPA approved the removal of Domestic Water Supply uses on June 3, 2020 for Unnamed Tributary of Brushy Creek from Vulcan Construction Materials Outfall 001 to Brushy Creek and Brushy Creek from Unnamed Tributary to Stennitt Creek. This could be reflected in the table above or below Stennitt Creek.

Response: The "†" footnote indicator will be removed from the Holman Creek, Town Branch, Unnamed Tributary of Brushy Creek, and Brushy Creek entries.

Appendix A-OH:

EPA

Comment: Strike the “†” footnote indicator from the Crooked Creek and White River entries under the Site-specific Criteria Variations Supported by Use Attainability Analysis heading. The EPA supports this revision. Likewise, the “†” footnote indicator can also be removed from the Holman Creek and Town Branch entries.

The listed criteria for these waters were approved by the EPA on May 22, 2020.

Response: The “†” footnote indicator will be removed from the Crooked Creek and White River entries.

Comment addition to TDS, please update to reflect the sulfate criterion for Stennitt Creek from Brushy Creek to Spring River that was approved by the EPA on June 3, 2020 (43 mg/L). Similarly, please update this table to reflect those new minerals criteria approved on the same date for Unnamed Tributary of Brushy Creek from Vulcan Construction Materials Outfall 001 to Brushy Creek and Brushy Creek from Unnamed Tributary to Stennitt Creek.

Response: The Stennitt Creek revised TDS and sulfate criteria will be added to the final rule. Additionally, the Brushy Creek and Unnamed Tributary revised mineral criteria will be added to the final rule.

Appendix A-ARV

EPA

Comment: Please strike the “†” footnote indicator from the Poteau River and Unnamed Tributary entries in the Site-specific Criteria Variations Supported by Use Attainability Analysis table. The associated footnote can be removed as well since all listed criteria have been approved by the EPA.

Response: The “†” footnote indicator will be removed from the Poteau River and Unnamed Tributary entries.

Appendix A-OM

EPA

Comment: Insert “*These temporary standards variations are effective for 160 months from EPA’s approval of the EIP.” as a footnote below the Temporary Variations Supported by EIP table. As stated in the EPA’s January 7, 2020 approval letter and as stated in the accompanying Technical Support Document, the temporary site specific criteria are approved for a period of 12.3 years from the date of the EPA’s approval. This is consistent with the timeline confirmed by ADEQ in Sarah Clem’s letter November 30, 2018 letter responding to the Russell Nelson’s October 18, 2018 inquiry regarding the duration of the HESI EIP project. The 12.3-year duration equates to 148 months.

Response: The footnote will be revised to “*These temporary standards variations are effective for 148 months from EPA’s approval of the EIP.”

EPA

Comment: The footnote “Not applicable for clean water act purposes until approved by EPA” and all references to it in the Temporary Variations Supported by EIP table have been removed.

The EPA supports this revision. In addition, we recommend that the temporary minerals criteria be reflected in Rule 2.511(A) as well.

Response: DEQ agrees. The EIP and the footnote will be added to Rule 2.511 (A)

Reyburn Creek from headwaters to confluence of Francois Creek	Sulfates 250 mg/L, TDS 500 mg/L ^{***†}
Scull Creek from a point approximately 350 feet upstream of Clearwater Lake to Clearwater Lake (including Clearwater Lake) and from Clearwater Lake dam to confluence Reyburn Creek	Sulfates 250 mg/L, TDS 500 mg/L ^{***†}

***These temporary standards variations are effective for 148 months from EPA’s approval of the EIP on January 7, 2020.

Appendix A-GC

EPA

Comment: Strike “Unnamed tributary to Flat Creek from EDCC Outfall 001 d/s to confluence with unnamed tributary A to Flat Creek Chloride 23 mg/L, Sulfate 125 mg/L, TDS 475 mg/L, (GC-2, #37) †” and “Unnamed tributary A to Flat Creek from mouth of EDCC 001 ditch to confluence with Flat Creek, Chloride 16 mg/L, Sulfate 80 mg/L, TDS 315 mg/L, (GC-2, #38) †” As described in ADEQ’s justification, the EPA has disapproved these revisions related to EDCC. No comment is necessary.

Response: The Division acknowledges this comment.

EPA

Comment: Strike the “†” after the entry “Red River from mouth of the Little River to the Arkansas/Louisiana state line, TDS 780 mg/L (GC-1, #55, 58)†” As described in ADEQ’s justification, the EPA has approved these revisions. No further comment is necessary.

Response: The Division acknowledges this comment.

EPA

Comment: Strike “†” footnote indicator at the end of the “Little River from Millwood Lake to the Red River...” entry. As described in ADEQ’s justification, the EPA approved these revisions in its 2016 action and deletion of the footnote indicate is appropriate. No further comment is necessary.

Response: The Division acknowledges this comment.

EPA

Comment: Insert “*These temporary standards variations are effective for 160 months from EPA’s approval of the EIP.” as a footnote below the Temporary Variations Supported by EIP table. The EPA’s approval letter and supporting TSD state that these temporary standards are approved for 12.3 years from the time of approval (January 7, 2020)), consistent with the timeframe referenced in a letter to Russell Nelson, EPA Region 6, from Sarah Clem, ADEQ, dated November 30, 2018. This equates to 148 months.

Response: The footnote will be revised to “*These temporary standards variations are effective for 148 months from EPA’s approval of the EIP.”

EPA

Comment: We recommend that temporary minerals criteria be reflected in Rule 2.511(A) as well.

Response: DEQ agrees. The EIP and the footnote will be added to Rule 2.511 (A)

Reyburn Creek from headwaters to confluence of Francois Creek	Sulfates 250 mg/L, TDS 500 mg/L***‡
Scull Creek from a point approximately 350 feet upstream of Clearwater Lake to Clearwater Lake (including Clearwater Lake) and from Clearwater Lake dam to confluence Reyburn Creek	Sulfates 250 mg/L, TDS 500 mg/L***‡

***These temporary standards variations are effective for 148 months from EPA's approval of the EIP on January 7, 2020.

EPA

Comment: As described in ADEQ's justification, in its June 6, 2016 action, the EPA disapproved revisions for the upper Red River – Arkansas/Oklahoma state line to the mouth of the Little River. No further comment is necessary.

Response: The Division acknowledges this comment.

EPA

Comment: Revise Plate GC-1 to remove #57 and #58. See prior comment. No further comment is necessary.

Response: The Division acknowledges this comment.

EPA

Comment: Revise Plate GC-2 to remove duplicate #40 and add #41. See prior comment. No further comment is necessary.

Response: The Division acknowledges this comment.

EPA

Comment: Coffee Creek and Mossy Lake The EPA and the ADEQ have discussed concerns related to removal of Gulf Coastal designated uses for Coffee Creek and Mossy Lake that was approved by the EPA in the early 1980s as it relates to the requirements in the federal regulation at 40 CFR 131.10 and 131.20(a). Given the regulatory requirements, in an effort to determine the appropriate uses for Coffee Creek and Mossy Lake, the EPA funded a use attainability analysis (UAA) in 2007 that was developed by Parsons Engineering and the University of Arkansas Ecological Engineering Group to determine if the "no aquatic life use" designation for Coffee Creek and Mossy Lake is appropriate.

The Parsons UAA indicates Coffee Creek and Mossy Lake have the potential to support the state's Gulf Coastal aquatic life use but that the Georgia-Pacific Crossett discharge effects both habitat and aquatic life in Coffee Creek and Mossy Lake. A subsequent UAA developed by AquAeTer Environmental Engineering in 2013 on behalf of Georgia-Pacific did not refute these findings but recommended the development of a seasonal Gulf Coastal aquatic life use.

The ADEQ appears to have considered the AquAeTer UAA recommendations and likely its own analysis and proposed a seasonal Gulf Coastal ecoregion aquatic life use for portions of Coffee

Creek as part of its 2019 triennial revisions as required by 40 CFR 131.10 and 131.20(a). However, the ADEQ's initial proposed revisions were limited to the addition of a "...seasonal Gulf Coastal ecoregion aquatic life use, but its application was limited to the historic channel of Coffee Creek upstream of Georgia Pacific's Mossy Lake Treatment Unit from N33.057, W092.055 to N33.094, W092.04 and the remaining upstream portion of the historic channel from N33.112, W092.013 to N33.119, W091.995." In our October 31, 2019 letter, the EPA provided comments and recommendations regarding this proposed revision, noting that it did not include seasonal uses that would apply to the entirety of Coffee Creek and Mossy Lake or appropriate CWA Sec. 101(a)(2) uses that would apply to these waters during the remainder of the year. These initial comments also referred to the requirements found in the federal regulations.

As part of Arkansas's water quality standards revisions process, the ADEQ has since provided its proposed revisions to Reg. 2, now Rule 2, to the Governor's Office for review. Following that review, the ADEQ petitioned the Arkansas Pollution Control and Ecology Commission (Commission) to adopt the revisions proposed by the Water Quality Planning Branch. However, the proposed revisions to Rule 2 that were brought before the Commission during its July 29, 2020 hearing no longer included the previously proposed seasonal use for the portions of Coffee Creek referred to in the ADEQ's initial proposed revisions and did not include uses consistent with CWA Sec. 101(a)(2) or Rule 2.102 and 2.302 for the Coffee Creek or Mossy Lake. In response, the EPA again recommends that Commission adopt uses consistent with CWA Sec. 101(a)(2) and Arkansas's own Rule 2.102 for the entirety of Coffee Creek and Mossy Lake and again reiterates the CWA requirements and those in the federal regulations at 40 CFR 131.10 and 40 CFR 131.20(a). See the EPA's October 2019 comments in **Attachment 4**.

Response: EPA "recommends that Commission adopt uses consistent with CWA Sec. 101(a)(2) and Arkansas's own Rule 2.102 for the entirety of Coffee Creek and Mossy Lake" and supports that recommendation by referencing the UAAs from 2008 and 2013.

After reviewing the historical records related to Coffee Creek, DEQ has determined that the "entirety of Coffee Creek" as referenced in Rule 2 clearly refers to that portion of Coffee Creek that is dominated by GP's effluent. (Arkansas's 1973 Water Quality Standards.)

The State of Arkansas's 1973 Water Quality Standards did not define a particular segment of "Coffee Creek." It simply classified "Coffee Creek" as having no primary contact recreation and fishery designated uses because the flow of Coffee Creek was dominated by GP's effluent. At that time, the only section of "Coffee Creek" that was dominated by GP's effluent was Coffee Creek below Mossy Lake.

Around 1970, GP constructed a concrete conveyance to Mossy Lake that separated its effluent from the historic creek bed that existed above Mossy Lake. The 1984 UAA states that "[t]he Mossy Lake/Coffee Creek System has been used as an integral part of the wastewater treatment system of the Georgia-Pacific manufacturing complex in Crossett, Arkansas since the turn of the century." The 1984 UAA identifies the historic creek bed above Mossy Lake as an "abandoned creek channel along the effluent system." The 1984 UAA also indicated that the flow of "Coffee Creek," in the absence of effluent, was intermittent in nature. In EPA's 1986 permit, Coffee Creek below Mossy Lake is the receiving stream for GP's effluent.

Based on these facts, DEQ has concluded that the original reference to Coffee Creek in Rule 2 requires further clarification. The confusion about how to describe “Coffee Creek” begins when the 1984 UAA appears to refer to parts of GP’s wastewater treatment system as part of Coffee Creek.¹ EPA’s comments indicate that this confusion has continued even after EPA issued its 1986 permit that authorized a discharge to Coffee Creek below Mossy Lake.

Pursuant to 40 C.F.R. § 120.2, waste treatment systems² are not waters of the United States. Georgia Pacific’s waste treatment system cannot be described as waters of the United States, and DEQ does not have the authority to designate a part of Georgia Pacific’s waste treatment system as waters of the United States.

The “entirety of Coffee Creek” that is both dominated by GP’s effluent and a water of the United States is limited to Coffee Creek below Mossy Lake. Therefore, Coffee Creek below Mossy Lake is the only extent portion of Coffee Creek that is potentially subject to having designated uses under Section 101(a)(2) of the Clean Water Act.

As a point of further clarification, EPA did not approve the removal of any designated uses from Coffee Creek or Mossy Lake in the 1980s because (1) Coffee Creek has not had primary contact recreation and fishery designated uses since 1973, meaning that there were no designated uses to remove,³ and (2) EPA permitted a discharge from Mossy Lake by NPDES permits that EPA issued in 1974, 1986, and 1991, an action that excluded Mossy Lake from the definition of Waters of the United States as defined by 40 C.F.R. § 120.2.⁴ This waste treatment system exclusion is intended to exclude waters that are incorporated in an NPDES permit as part of a treatment system when the discharges from the system meet the requirements of that NPDES permit and the CWA. (*In Re Arizona Public Service Co.*, NPDES Appeal No.19-06 at p.271.) Excluding Mossy Lake from waters of the United States is consistent with the NPDES permits issued to GP by EPA and DEQ. Discharges from Mossy Lake are required to meet water quality based effluent limits, and the discharges from Mossy Lake do meet those limits. EPA’s comments and recommendations regarding uses under Section 101(a)(2) of the Clean Water Act that would apply to “Mossy Lake” appear to run counter to 40 C.F.R. § 120.2.

¹ EPA approved the 1984 UAA in 1988.

² Waste Treatment Systems include “all components, including lagoons and treatment ponds (such as settling or cooling ponds), designed to either convey or retain, concentrate, settle, reduce, or remove pollutants, either actively or passively, from wastewater prior to discharge (or eliminating any such discharge)” 40 C.F.R. § 120.2.

³ Since 1973, the State of Arkansas’s Water Quality Standards identify Coffee Creek as a water of the state that does not have primary contact recreation and fishery uses. Since EPA first approved the State of Arkansas’s Water Quality Standards, Coffee Creek has not had primary contact recreation and fishery uses. See Regulation Establishing Water Quality Standards for Surface Waters of the State of Arkansas, dated March 27, 2020, <https://www.epa.gov/wqs-tech/water-quality-standards-regulations-arkansas#state>

⁴ These EPA-issued permits are on DEQ’s PDS under NPDES Permit No. AR0001210

The only remaining segment of Coffee Creek that DEQ is required to evaluate for potential uses under Section 101(a)(2) of the Clean Water Act is Coffee Creek below Mossy Lake. At this time, DEQ does not propose to amend the existing uses for the segment of Coffee Creek from below Mossy Lake to the Ouachita River. The 2008 and 2013 UAAs did not focus on this section, and the changes at GP's facility have made those UAAs irrelevant because they do not reflect current conditions.

The 2008 and 2013 UAAs do not clearly support adding an aquatic life use for that section of Coffee Creek that is independent of its connection to the Ouachita River. Both UAAs acknowledge that conditions in Coffee Creek below Mossy Lake are influenced by the Ouachita River. The 2008 UAA stated that "Coffee Creek below Mossy Lake is likely to sustain a viable and diverse aquatic community within the back waters of the Ouachita River." The 2013 UAA stated that for Coffee Creek below Mossy Lake, "[the sampling site] is directly connected to the Ouachita River and fisheries found here have migrated from the Ouachita River the short distance up to [the sampling site]." As a result, DEQ cannot rely on those UAAs to support a change at this time.

In addition, when the Ouachita River inundates portions of Coffee Creek, the water body remains the Ouachita River because that represents the conditions that occur in a typical year. When the Ouachita River inundates Mossy Lake, the water body remains the Ouachita River and Mossy Lake is temporally unable to function as part of Georgia Pacific's waste treatment system. DEQ will address discharges from Georgia Pacific's waste treatment system to the Ouachita River when it issues the renewal for NPDES Permit No. AR0001210.

Finally, Georgia Pacific closed about half of its operations at the Crossett facility in 2019. This closure has changed the character of the wastewater entering Georgia Pacific's waste treatment system. As a result, DEQ cannot rely on the old UAAs to establish the conditions in Coffee Creek below Mossy Lake.

DEQ acknowledges that the State of Arkansas's Water Quality Standards do not fully capture this regulatory history or provide a proper description of "Coffee Creek" or "Mossy Lake." The State of Arkansas's Water Quality Standards should be clarified to provide an accurate description of Coffee Creek and Mossy Lake.

In response to EPA's comment, DEQ proposes to make the following changes:

- 1) DEQ proposes to amend Rule 2 by adding a footnote that states "Coffee Creek" for purposes of Rule 2 is defined as Coffee Creek from below Mossy Lake to the Ouachita River.
- 2) DEQ proposes to amend Rule 2 by adding a footnote that states Mossy Lake is excluded from the waters of the United States as defined by 40 C.F.R. § 120.2 because it functions as a component of GP's waste treatment system.

The two segments of "Coffee Creek" above Mossy Lake that are connected by GP's stormwater conveyance are not influenced by GP's wastewater, and, for that reason, those segments have the

aquatic life use that is appropriate for similar water bodies in that ecoregion. DEQ proposes to clarify Rule 2 on this point in a future rulemaking if necessary, but DEQ does not propose to add a domestic water supply use to these segments.

Although DEQ is not proposing to amend the existing uses for the segment of Coffee Creek from below Mossy Lake to the Ouachita River, DEQ is committed to working with GP and EPA to develop an appropriate understanding of the conditions in that one half-mile section of Coffee Creek and propose appropriate uses.

Appendix A-D

EPA

Comment: Insert “(Rocky Branch to Pulaski/Lonoke county line)” and strike “from Rocky Branch Creek to Bayou Two Prairie” in the first Bayou Meto entry under “Site-specific Criteria Variations Supported by Use Attainability Analysis” heading. As noted in our prior response on Reg. 2.511(A), the proposed revisions here are specific to “Bayou Meto to Pulaski/Lonoke county line” and “Bayou Meto (Pulaski/Lonoke county line).” The EPA does not have any concerns with revising these descriptors in Appendix D (D-3, Map Insert 42).

Response: The Division acknowledges this comment.

EPA

Comment: Appendix A-D: Bayou DeView from mouth to AR Hwy 14 moved to different part of Site Specific Standards Criteria Variations table. This water should be removed from its original location (D-1. # 41) of the same table.

Response: Bayou DeView from mouth to AR Hwy 14 encompasses plates D-1 and D-3. It is appropriately noted in the corresponding tables as #41 for plate D-1 and #47 for plate D-3. No revisions are needed.

COMMENTS REGARDING ALL FLOWS/STORM FLOWS AND RULE 2.503 TURBIDITY

The following comments were similar; one response is provided at the end of this set of comments.

Rule 2.106 Definitions

EPA

Comment: Strike All Flows. As stated in our January 24, 2008 action and described in detail in our TSD, the EPA took no action on the definition in Reg. 2.106 of “All Flows.” However, in that same action, the EPA disapproved the associated revised heading title of "All Flows Values" and associated text revision (from "storm-flow" to "all flows") in Reg. 2.503 (see response to revisions to Reg. 2.503 below). The EPA supports ADEQ’s deletion of this definition.

Buffalo River watershed Alliance (BRWA), Fay Knox, Sandy Bernet, Shawn Porter, Carol Storthz, Michael E. Kelly, Richard Osborne, Brenda Scheffler, Larry and Marti Oelsen, Mark Smith, Chris Cristoffel, Beth Ardapple, Fran Alexander, Linda Stith

Comment: All Flows: BRWA agrees with striking the “All Flows” definition from text.

Storm Flow: BRWA disagrees with the proposed definition due to its lack of specificity to an event and the lack of distinction from Base Flow events. The ambiguity of this term likely has enforcement and permitting implications that would prevent violations of the Clean Water Act (CWA) from being enforced. Our recommendation is “Storm Flow” should be quantified and understood to mean water flow above base flow levels.

BWD

Comment: BWD requests that any changes to the definitions for All Flows and for Storm Flows be designed to preserve the level of protection that any water quality criterion utilizing these terms was originally established to provide.

EPA, BWD

Comment: Insert “Storm flows: Takes into account all flows and data collected throughout the year, including elevated flows due to rainfall events.” See the comment on Reg. 2.503 – Turbidity below.

Rule 2.503 Turbidity

EPA, BWD

Comment: The proposed revisions to the opening sentence in Reg. 2.503 do not alter the meaning of the sentence and are acceptable. As part of the Commission’s 2007 triennial “Phase II” revisions, the heading “Storm- Flow Values” was replaced with a new heading titled “All Flows Values”, the term “storm flows” in the text of Regulation 2.503 was revised to read “all flows” and a new definition in Regulation 2.106 for “All Flows.” The EPA disapproved these revisions because they modified the application of the less stringent turbidity criteria in a way that is inconsistent with the original intent of deriving storm flow criteria. Using this approach may also result in the potential misidentification of a water in the state’s Integrated Water Quality Monitoring Assessment Report (CWA §305(b)/303(d) integrated report) as supporting its applicable fisheries designated use when it may actually be impaired due to turbidity as

detailed in our January 28, 2008 action and supporting Record of Decision (ROD). Reverting to the previously approved column heading “Storm-Flow Values” without addressing this underlying problem could potentially be seen as simply renaming the same problem making it difficult for the EPA to approve these revisions.

The new definition in Reg. 2.106 of “*Storm flows: Takes into account all flows and data collected throughout the year, including elevated flows due to rainfall events*” provides some context to how storm flow turbidity criteria are presently assessed. However, it remains overly expansive (i.e. still references “all flows”), and does not provide a definitive criterion, or criteria, by which storm flows are differentiated from base flows. A clear definition of storm flows is important in that it allows the assessor to make a sound judgment as to which criterion should apply under a given flow condition. At present, the state’s assessment methodology for turbidity provides two approaches: one for baseflow, in which all turbidity data collected between May and October are applied against baseflow criteria, and one for storm flow, in which all turbidity data collected under any flow scenario across all seasons are applied against storm flow criteria. The former approach assumes that reduced flows occur most frequently during the summer and early fall months. It is questionable whether this would be appropriate every year, particularly during wet years when stormwater turbidity measurements may be compared to baseflow turbidity criteria, thereby raising the possibility of unnecessarily identifying a higher number of exceedances. Alternatively, the latter approach appears to fall back to assessing turbidity under all flows, as opposed to storm flows only, thereby discounting the original intent of the storm flow criteria to evaluate turbidity increases after storm events. As noted in the EPA’s 2008 ROD, storm flow criteria were based on a 90th percentile of historic turbidity data in each ecoregion, ostensibly representing turbidity conditions under high (or relatively high) flow conditions, likely storm flow related, in which turbidity becomes more elevated. Assessing year-round turbidity data against the storm flow criteria, irrespective of flow condition, potentially biases that assessment if there are a large number of baseflow turbidity measurements in the dataset, thereby reducing the potential of finding >25% of samples exceeding the stormflow criteria. When using a binomial approach in assessments, every measurement is important, whether under baseflow or storm flow conditions and to apply an inappropriate criterion to just a few turbidity measurements can lead to significant decision error. The above issues point to the need for a clear definition of both baseflows and storm flows in the water quality standards and to apply the criteria to turbidity measurements based on field observed flow conditions.

The EPA understands that part of the issue with assessing storm flow-based criteria is the lack of flow data available at the time turbidity measurements are made, making the judgment of which criteria to apply more onerous. As a possible stopgap, in lieu of empirical flow measurement during every sampling event, the EPA recommends that ADEQ consider a flow estimation technique, such as the use of flow severity guidelines (**Attachment 2**), that allows for the field identification of flow conditions that could be used by assessors to more appropriately apply the dichotomous flow-based criteria (this approach is obviously most appropriate for use in rivers and streams, but could also be applied to tributaries of lakes and reservoirs for the same purpose). While the use of such estimation techniques may be subjective among different observers and may require some degree of calibration among field staff prior to widespread use, the resulting information would perhaps provide a more accurate assessment of actual flow conditions as compared to the presently broad, and possibly biased, assumptions about the

seasonality of flow and applicability of criteria. Upon settling on a particular set of flow observation categories and the appropriate cutoffs among these categories, the definitions of baseflow and stormflow should be incorporated into the water quality standards under Reg. 2.106 based on ADEQ's evaluation of which flow categories best represent baseflow versus stormflow.

The comments outlined above are intended to further the discussion between the EPA and the ADEQ on this topic and to gain better insights into how the ADEQ's assessment approach evolved from the original derivation of these criteria. It is important that the ADEQ provide supporting information to further clarify how the Department's assessment approach applies baseflow and storm flow turbidity criteria and explain why this approach is appropriate to support the proposed revised heading title and associated definition.

CAW

Comment: Strike "all" and replace with "storm" in the last sentence of the first paragraph and in the table.

The revision from "storm" to "all" flows was disapproved by the EPA in 2008 and upheld after some discussion in the 2016 Technical Support Document. As a result, the language must revert to original.

The new definition in Reg. 2.106 of "Storm flows: Takes into account all flows and data collected throughout the year, including elevated flows due to rainfall events" provides some context to how storm flow turbidity criteria are presently assessed. However, it remains overly expansive (i.e. still references "all flows"), and does not provide a definitive criterion, or criteria, by which storm flows are differentiated from base flows. A clear definition of storm flows is important in that it allows the assessor to make a sound judgment as to which criterion should apply under a given flow condition. It is important that ADEQ provide supporting information to further clarify how the Department's assessment approach applies baseflow and storm flow turbidity criteria and explain why this approach is appropriate to support the proposed revised heading title and associated definition.

White River Water Keeper (hereinafter WRWK)

Comment: In 2008, EPA disapproved of revising storm flow to all flow and the associated text related to those changes made in Arkansas' turbidity criteria. DEQ has only proposed replacing "all" with "storm" in title alone. The proposed revision still maintains the "all flows" definition for "storm flow". With that, DEQ's not interpreting or applying these criteria in the spirit of how and why they were created and promulgated. And it is to the detriment to of Arkansas streams and aquatic ecosystems. When the stormflow criteria were adopted into Arkansas's water quality standards, EPA's 2004 approval for the storm flow turbidity criteria noted that the storm flow values would not be expected to be exceeded during most storm events and as such would be appropriate as in-stream criteria to be used in assessing impacts resulting from increased turbidity values following common high frequency storm movements. Ignoring the spirit and intent of how the storm flow criteria are to be applied, results in the misidentification of water bodies supporting or not supporting applicable fisheries designated uses during clean water act 305(b) and 303(d) assessments. Failure to apply these criteria how they were intended not only

obstructs the state's ability to maintain and restore the physical, chemical, and biological integrity of our state's waters, it also obscures the need for real leadership and action that is necessary to adapt, to address the detrimental effects of nonpoint source pollution across the state across the state.

Appendix A

EPA

Comment: Strike "all" and insert "storm" under the turbidity heading of within the table. As noted in the response to Reg. 2.503 above, the EPA supports this revision.

Response: Storm-flow turbidity criteria were adopted into Rule 2 on April 23, 2004, during the triennial review, and were approved by EPA on December 21, 2004. The definition of storm-flow was added per EPA's suggestion in their Record of Decision (ROD):

"Inclusion of a definition for "storm-flow" would help to clarify which data is being used to make attainment decisions."

The definition of All Flows/Storms Flows is verbatim since its adoption during the September 28, 2007 Reg. 2 triennial revision. No revisions to the text of the definition of All Flows/Storm Flows were made.

Changing the definition of "storm flows" is not supported by EPA's previous approval of the criteria. DEQ cannot now change the definition of "storm flow" to exclude base flows and still use the current numeric criteria that EPA has approved. That would result in a definition for the criteria that are not scientifically supported by the data and methods used to develop those criteria. EPA's approval of criteria that are based on all data collected is supported by EPA's December 21, 2004 ROD.

"Previously, Regulation No.2 provided turbidity criteria (primary values) for specific ecoregions and large rivers which were applicable to the effect point source discharges might have on stream turbidity. Additional criteria (storm-flow values) were added to this provision for the same ecoregions and large rivers. These storm-flow values are applicable to the effect of naturally occurring storm events on stream turbidity. Previous assessment methodology used by the State has applied the primary values during the critical season (May 1 through September 30) and has applied storm-flow turbidity values year-round.

The primary turbidity criteria were established from stream baseflow data and do not reflect the more typical turbidity values found during regularly occurring storm events. The purpose for including these new storm-flow turbidity values was to recognize the naturally occurring increase in turbidity after a storm event. ADEQ has stated that the storm-flow values reflect the turbidity levels that are met near 90% of the time in long-term databases, including turbidity levels present during common storm events. These storm-flow values would not be expected to be exceeded during most storm events, and as such, would be appropriate as in-stream criteria to be used in assessing impacts resulting from increased turbidity values following common, high-frequency storm events.

EPA considers the new storm-flow turbidity values to be approvable, because they are intended to reflect the natural increase in turbidity from nonpoint source runoff that occurs following a storm event. The CWA does not establish a federally-enforceable program for nonpoint sources, but it clearly intends that the best

management practices developed under the Act be aggressively implemented by the states.”

The “base flow” turbidity criteria apply from June to October and are based on data collected during that time frame over multiple years. The “storm flows” or “all flows” turbidity criteria apply during the entire year and are based on all data collected over multiple years. These values represent the 90th percentile of all data, storm flow and non-storm flow data. These are the criteria that EPA approved, and DEQ provided EPA with this information about the development of the criteria before EPA approved of those criteria (see Exhibit D).

GENERAL COMMENTS NOT RELATED TO A SPECIFIC RULE

AGFC

Comment: Hydrologic Alteration

The AGFC supports the resolution that the Southern Division of the American Fisheries Society adopted in 2019, which calls for the inclusion of hydrologic alteration as a source of impairment for state water quality standards. Flow alteration can be a primary contributor to the impairment of water bodies that are designated to support aquatic life. A USGS study (Carlisle et al. 2011) found that anthropogenic hydrologic alteration is extensive in the US and may be a primary cause of ecological impairment in river and stream ecosystems. We recommend that DEQ follow the guidance provided by the EPA (Best-Wong 2015) to incorporate either numeric or narrative flow criteria into the state water quality standards as soon as possible.

Response: The Division acknowledges this comment.

AGFC

Comment: Sedimentation and Embeddedness: Rule 2 does not address sedimentation and embeddedness. AGFC recommends the use of language similar to the State of Oklahoma's to include sedimentation and embeddedness in Rule 2 and encourages the immediate implementation of sedimentation and embeddedness standards in the ecoregions bordering Oklahoma; Ozark Mountains, Arkansas River Valley and Ouachita Mountains. ADEQ report WQ99-07-1 contains data collected for reference streams in the aforementioned ecoregions that could be used to determine impairment.

Response: The Division acknowledges this comment.

AGFC

Comment: Ecologically Sensitive Waterbodies

Some waterbodies have known occurrences of threatened and endangered species, but are not currently recognized by Rule 2 Appendix A as Ecologically Sensitive Waterbodies (ESWs). The AGFC encourages DEQ to solicit information from state and federal partners pursuant to 40 CFR § 131.20 to expand designations of ESWs based upon new and updated species distribution and collection records. Arkansas is required during the review and revision of water quality standards, to "hold public hearings for the purpose of reviewing applicable water quality standards adopted pursuant to 131.10 through 131.15 and federally promulgated water quality standards and, as appropriate, modifying and adopting standards. The State shall also re-examine any waterbody segment with water quality standards that do not include the uses specified in section 101(a)(2) of the Act every 3 years to determine if any new information has become available. If such new information indicates that the uses specified in section 101(a)(2) of the Act are attainable, the State shall revise its standards accordingly." DEQ has routinely excluded the addition of new waterbodies with known distributions of threatened and endangered species to Rule 2, Appendix A. The AGFC works with state, federal, nongovernmental organizations, and private landowners to protect, enhance, and maintain habitat for aquatic threatened and endangered species and Species of Greatest Conservation Need. The expert staff at AGFC would be available to assist DEQ in this endeavor of updating the list of ESW designations based on updated occurrence records.

Response: Adding the designated use of Extraordinary Resource Water, Ecologically Sensitive Waterbody, or Natural and Scenic Waterway to a waterbody or waterbody segment must be completed in accordance with Rule 2. Rule 2, Appendix F identifies the factors considered in adding the designated use of Extraordinary Resource Water, Ecologically Sensitive Waterbody, or Natural and Scenic Waterway to a waterbody or waterbody segment. DEQ is supportive of AGFC working through this rulemaking process. In April 2019, DEQ supplied AGFC and four (4) other interested stakeholders with several documents to aid in the beginning of this process. DEQ followed up with the group in October of 2019, but is unaware that any progress has been made.

Adam Schaffer, Amanda Kennedy, Cindy Jetton, Ellen Corley, Ellen Mitchell, Karen Seller, Nancy Diesch, Pam Stewart, Shane Jetton, Carol Bitting, Dane Schumacher

Note: Due to the variety of comments on this same topic, this comment is provided in summary.

Comment: Numerical water quality standards are superior to ambiguous narrative water quality standards. Protecting our water quality and beneficial uses, especially in our wild and scenic riverways, Tier 3 (ORWs, ERWs, ESW, NSW), and the Kings, Buffalo, White, Current, Spring and Eleven Point rivers is a benefit to all Arkansans.

Response: Rule 2 includes numeric criteria for several parameters. Regarding nutrients, the nutrient water column concentrations do not always correlate directly with stream impairments. Impairment of a waterbody from excess nutrients is dependent on the natural waterbody characteristics such as stream flow, residence time, stream slope, substrate type, canopy, riparian vegetation, season of the year, and ecoregion water chemistry, which includes the nutrient concentrations and ratios (N:P). Hence, impairments due to nutrients are better assessed by a combination of both numeric and narrative standards wherever possible. These standards include, but are not limited to, water clarity, periphyton or phytoplankton production, dissolved oxygen values, dissolved oxygen saturation, diurnal dissolved oxygen fluctuations, pH values,

and aquatic-life community structure.

Kimberly Brasher

Comment: I beg you to please make clean water a priority. I will never understand why not everyone can agree to this. We want clean drinking water, we want clean recreation water, we want clean water for the fish, etc... Please do the right thing. Protect our waterways at all cost!!

Response: The Division is committed to protecting the uses of Arkansas's waterways.

Nancy Diesch

Comment: Once again I would ask that you and your agency work to protect our water and waterways. There are so many reasons for taking those steps and avenues to employ to optimize the funds, time, and personnel for that protection. One way would be to quit spending everyone's time on legislation, regulations, and hearings and just do the right thing for the state and its natural resources.

Response: Protecting Arkansas's waterbodies entails following appropriate rulemaking processes in compliance with Arkansas law, the Clean Water Act, and the related rules and regulations, as set forth in APC&EC Rule 8. APC&EC promulgates rules for the protection of waters of the state, and DEQ adheres to those rules. Refer to DEQ's Rulemaking Process flow chart, attached as Exhibit C, for additional rulemaking information.

Pam Stewart

Comment: It is important for the public to be able to quickly check on the quality of a stream which they are expecting to be of extraordinary resource water, whether they are using the stream for fishing, swimming or educationally, as for a biology class. Streams entering ERWs also require assessment that the public can quickly check in order to identify where pollutants may enter the ERA.

Arkansas is famous for its pure waters. Everything possible should be done to keep high ERW standards. Increasing summer heat and area population increases are likely to increase chances of pollution in ensuing years. Let's hope ADEQ is up to protecting our streams and rivers

Response: There are multiple resources on the DEQ website that allow any individual to view water quality data for streams with data. Aquaview, a web-based mapping application allows users to view an interactive map with multiple layers of water quality data including, but not limited to, ERW, ESW, and NSWs. In addition, all of the fish, habitat, macroinvertebrate, and water quality data that have been collected can be viewed on DEQ's website (<https://www.adeg.state.ar.us/>).

Jeff Williams, John Casey, Carol Bitting

Note: Due to the variety of comments on this same topic, this comment is provided in summary. Individuals voiced general concern about Buffalo River and urged the Division to protect the Buffalo River watershed.

Response: The Division is committed to the protection of the Buffalo National River. The Division collects water quality data on the Buffalo National River, monitors algae blooms, collaborates with other state, federal, and watershed entities, and is involved in the Buffalo River Conservation Committee.

Beaver Water District

Comment (Triennial Review Process): The Arkansas Department of Energy and Environment, Division of Environmental Quality (DEQ) is required by section 303(c)(1) of the federal Clean Water Act (CWA) to conduct a review and update of the State's surface water quality standards every three years (the so-called, "Triennial Review"). BWD was a participant in DEQ's 2013 Triennial Review Stakeholder Workgroup. That Triennial Review resulted in amendments to Reg. 2 that were adopted by APCEC on February 28, 2014. Participants in the 2013 Triennial Review Stakeholder Workgroup suggested multiple revisions to Reg. 2 that DEQ chose to defer to the next Triennial Review. The next Triennial Review was not begun until 2019. BWD was also a participant in the 2019 Triennial Review, DEQ in the 2019 Triennial Review largely did not consider the deferred issues or new issues raised by the 2019 Stakeholder Workgroup. Instead, DEQ moved forward with what it termed a "clean-up" rule (*i.e.*, changing Arkansas Department of Environmental Quality to Arkansas Department of Energy and Environment, Division of Environmental Quality, changing "regulation" to "rule," providing "clarification" and "minor corrections . . . illustrative of the regulatory intent;" making changes to incorporate United State Environmental Protection Agency (EPA) decision on previous versions of the rule, removing permitting language that is to be moved to APCEC Regulation No. 6, and making "non-substantive stylistic and formatting" corrections) (see DEQ's Petition to Initiate Rulemaking to Amend Regulation No. 2, pp. 1-9). DEQ should not wait another three or more years to consider the substantive issues raised by the 2013 and 2019 Stakeholder Workgroup participants that were deferred or not addressed. BWD requests that as soon as APCEC acts on the 2019 Triennial Review update of Rule 2, DEQ being a stakeholder-involved process to consider further revisions to Rule 2.

Response: The Division is already preparing for the next triennial review process. Beaver Water District and any other interested person may initiate a third-party rulemaking to make changes to APC&EC Rule 2 using the procedures set forth in APC&EC Rule 8.

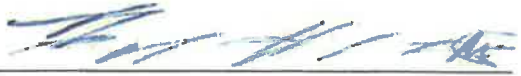
BWD

Comment (Rule 6): DEQ's Petition to Initiate Rulemaking to Amend Regulation No. 2 (Hereinafter, "DEQ Petition") lists five categories of proposed amendments. One of those categories is to, "remove permitting language from Reg. 2 (Rule 2) that is being adopted into Rule 6 – Regulations for the State Administration of the National Pollutant Discharge Elimination System (NPDES), Rule 6.404." (DEQ Petition, pp. 8-9). That language carries the following footnote: "If Rule 6 revisions are not adopted by APCEC and not approved by EPA, then this language will remain in Rule 2." (DEQ Petition, p. 9). In June 2020, however, DEQ's proposed revisions to Regulation No. 6 (hereinafter, "Reg. 6") failed to receive the requisite approval of the Arkansas legislature. The currently effective version of Reg. 6 is from 2015, and it does not include the permitting language that DEQ now proposes to delete from Reg. 2.404, 2.409, 2.502, 2.503, 2.504, 2.505, 2.507, 2.508, 2.509, 2.510, 2.512(D), and Appendix A. The "permitting language" should not be deleted from Reg. 2 until the same or more stringent language has been added to a revised Reg. 6 that has received all necessary approvals, including that of the Governor, the General Assembly, APCEC, and EPA. To do so would, among other things, likely result in objections to and appeals of NPDES permits containing terms and conditions based on provisions that are no longer contained in any effective regulation.

Response: Proposed revisions removing permitting language, receiving water language, or discharge language from Rule 2 will not occur at this time. This language will remain in Rule 2

until adoption into Rule 6 has been approved by the APC&EC, Legislative Committees, and U.S. EPA.

Submitted,



Basil V. Hicks III
Division of Environmental Quality
5301 Northshore Drive
North Little Rock, Arkansas 72218
(501) 682-0884
hicks@adeq.state.ar.us

EXHIBIT A - List of Commenters

1. Adam Schaffer
2. Amanda Kennedy
3. Arkansas Game and Fish Commission
4. Beaver Water District
5. Beth Ardapple
6. Brenda Scheffler
7. Buffalo River Watershed Alliance (BRWA)
8. Carol Bitting
9. Carol Storthz
10. Chris Cristoffel
11. Chuck Bitting
12. Cindy Jetton
13. Dane Schumacher
14. Department of Environmental Quality (DEQ)
15. Ellen Corley
16. Ellen Mitchell
17. Fay Knox
18. Fran Alexander
19. IDEXX
20. Jeff Williams
21. John Casey
22. Karen Seller
23. Kimberly Brasher
24. Larry and Marti Olesen
25. Linda Stith
26. Mark Smith
27. Michel E. Kelly
28. Nancy Deisch
29. Ozark Society
30. Pam Stewart
31. Paul R Easley/CAW
32. Richard P. Osborne
33. Sandy Bernet
34. Shane Jetton
35. Shawn Porter
36. White River Water Keeper (WRWK)
37. United States Environmental Protection Agency, Region 6 (EPA)

EXHIBIT B – 304(a) Justifications

Arkansas currently has narrative nutrient criteria in Arkansas Pollution Control & Ecology Commission Rule 2.510 for waterbodies across the state and numeric chlorophyll a criteria for one reservoir. In addition to adopting narrative and numeric criteria, Arkansas regulates the discharge of nutrients via monthly average discharge permit limits on all point source discharges into waters listed on Arkansas's impaired waterbodies list (303(d)) with phosphorus as the cause. Additionally, permitted dischargers in nutrient surplus watersheds as designated pursuant to Ark. Code Ann. § 15-20-1104 and subsequently designated nutrient surplus dischargers may get permit limits if the point source discharges are shown to provide a significant phosphorus contribution to waters within the nutrient surplus watersheds.

Arkansas Division of Environmental Quality (DEQ), in partnership with interested parties in Arkansas, implemented a Harmful Algal Bloom (HAB) Management Plan in December of 2019. Advisories are primarily based on visual confirmation of a bloom out of an abundance of caution given the sporadic nature of cyanobacteria blooms and release of toxins, the difficulty of a timely response, the challenges posed by temporal and spatial dispersal of toxins, and the time and expense of testing. DEQ utilizes the Environmental Protection Agency's (EPA) recommended thresholds to monitor blooms throughout their duration and determine magnitude of threat to human health. This information is then used to make decisions on which lakes will be added to DEQ's routine lake monitoring program. For these reasons, issuing advisories as laid out in the HAB Management Plan is the best approach for addressing cyanobacteria blooms in the State of Arkansas.

Based upon EPA's Toxic Release Inventory (TRI), the following pollutants are not currently discharged in Arkansas waters via a NPDES permitted outfall: 1,1,2,2-Tetrachloroethane; 1,2,4,5-Tetrachlorobenzene; 1,3-Dichloropropene; 1,2-Diphenylhydrazine; 2-Chlorophenol; 2-Methyl-4,6-Dinitrophenol; 3,3'-Dichlorobenzidine; 3-Methyl-4-Chlorophenol; Acrolein; Aldrin; alpha-Endosulfan; alpha-Hexachlorocyclohexane (HCH); Benzidine; Benzo(b)fluoranthene; Benzo(k)fluoranthene; beta-Endosulfan; beta-Hexachlorocyclohexane (HCH); Bis(2-Chloroethyl) Ether; Bis(2-Chloro-1-methylethyl) Ether; Bis(2-Ethylhexyl) Phthalate; Bis(Chloromethyl) Ether; Bromoform; Chlordane; Chlorodibromomethane; Chlorophenoxy Herbicide (2,4,5-TP) [Silvex]; Chlorophenoxy Herbicide (2,4-D); Dibenzo(a, h)anthracene; Dichlorobromomethane; Dinitrophenols; Endosulfan Sulfate; Endrin; Endrin Aldehyde; Heptachlor; Heptachlor Epoxide; Hexachlorocyclopentadiene; gamma-Hexachlorocyclohexane (HCH) [Lindane]; Hexachlorocyclohexane (HCH) – Technical; Indeno(1,2,3-cd)pyrene; Isophorone; Methoxychlor; Methyl Bromide; Methylmercury; Nitrosodibutylamine; Nitrosodiethylamine; Nitrosopyrrolidine; N-Nitrosodimethylamine; N-Nitrosodi-n-Propylamine; N-Nitrosodiphenylamine; Nonylphenol; p,p'-Dichlorodiphenyltrichloroethane (DDT); p,p'-Dichlorodiphenyldichloroethane (DDD); p,p'-Dichlorodiphenyldichloroethylene (DDE);

Pentachlorobenzene; Polychlorinated Biphenyls (PCBs); Toxaphene; Acrolein; Carbaryl; Tributyltin (TBT); and Diazinon. DEQ will continue to monitor EPA's TRI.

EPA's TRI states that the following pollutants are not currently discharged into AR waters; however, some NPDES reporting and limit requirements exist for these pollutants: 1,1,1-Trichloroethane; 1,1,2-Trichloroethane; 1,2,4-Trichlorobenzene; 1,2-Dichloropropane; 1,3-Dichlorobenzene; 1,4-Dichlorobenzene; 2,4-Dinitrotoluene; Acrylonitrile; Anthracene; Benzo(a)pyrene; Carbon Tetrachloride; Chlorobenzene; Chloroform; Cyanide; Dieldrin; Hexachlorobenzene; Hexachloroethane; Methylene Chloride; Nitrobenzene; Pentachlorophenol; Tetrachloroethylene; Trichloroethylene; Vinyl Chloride; and Aluminum. DEQ will continue to monitor and review the results for these pollutants.

Minimal amounts of the following pollutants are discharged into Arkansas waters: Benzene; Phenol; and Toluene. DEQ will investigate if EPA's new criteria are appropriate for Arkansas during a future triennial review.

The studies used by EPA to develop criteria for the following pollutants were noted as having either inadequate data for study confidence level determination or a low confidence level: 1,2-Dichlorobenzene; 2,4,5-Trichlorophenol; 2,4-Dichlorophenol; 2,4-Dimethylphenol; 2,4-Dinitrophenol; Acenaphthene; Antimony; Butylbenzyl Phthalate; Diethyl Phthalate; Di-n-Butyl Phthalate; Ethylbenzene; Fluoranthene; Fluorene; Pyrene; Trans-1,2-Dichloroethylene; 1,1-Dichloroethylene; 1,2-Dichloroethane; 2-Chloronaphthalene; Benzo(a)anthracene; Chrysene; Dimethyl Phthalate; Hexachlorobutadiene; Thallium; and 2,4,6-Trichlorophenol. As one or more of these pollutants are currently discharged into Arkansas waters, DEQ will continue to monitor EPA's criteria studies and re-evaluate when there is better scientific understanding.

DEQ currently has criteria for cadmium based on EPA's 1984 criteria document. DEQ evaluates each discharging facility for reasonable potential and when reasonable potential exists, the facility is given NPDES permit limits for cadmium. DEQ will evaluate EPA's 2016 criteria document during a future triennial review and, if appropriate, develop and propose criteria for Arkansas.

DEQ currently has criteria for selenium based on EPA's 1987 criteria. DEQ evaluates each discharging facility for reasonable potential and when reasonable potential exists, the facility is given NPDES permit limits for selenium. EPA has not released the final implementation documents for selenium. Therefore, DEQ will wait on adopting the 2016 criteria until there is a better understanding of the criteria, the implementation methods, and how the new 2016 criteria will impact Arkansas.

DEQ currently has criteria for copper based on EPA's 1984 criteria. DEQ evaluates each discharging facility for reasonable potential and when reasonable potential exists, the facility is given limits for copper. EPA's 2007 criteria use the Biotic Ligand Model that relies heavily on pH and Dissolved Organic Carbon (DOC) values. DEQ has limited DOC data from only one of

Arkansas' six (6) ecoregion in Arkansas. EPA's level 4 ecoregion DOC values are significantly lower than DEQ's data. DEQ will wait on adopting the 2007 criteria until DEQ has a better understanding of the discrepancy between EPA's and DEQ's DOC data and developed additional statewide DOC data.

DEQ currently has criteria for 2,3,7,8-TCDD (Dioxin). DEQ's current criteria, which is based on EPA's 1986 criteria, are below the detection limit per EPA Method 613. Likewise EPA's 2002 criteria are also below the detection limit as set forth in EPA Method 613. Therefore, DEQ will investigate if adopting the 2002 criteria will be appropriate for Arkansas during a future triennial review.

DEQ currently has criteria for ammonia based on EPA's 1999 criteria. Facilities discharging domestic wastewater or industrial facilities known to discharge ammonia are given limits. The limit is set at a value protective of both the dissolved oxygen (DO) criteria and the ammonia toxicity criteria of the receiving stream. Additionally, whole effluent toxicity (WET) testing remains a reasonable approach for assessing toxicity from ammonia. DEQ will investigate if EPA's new ammonia criteria, issued in 2013, are appropriate for Arkansas.

EXHIBIT C – Rulemaking Flowchart

DEQ Rulemaking Process

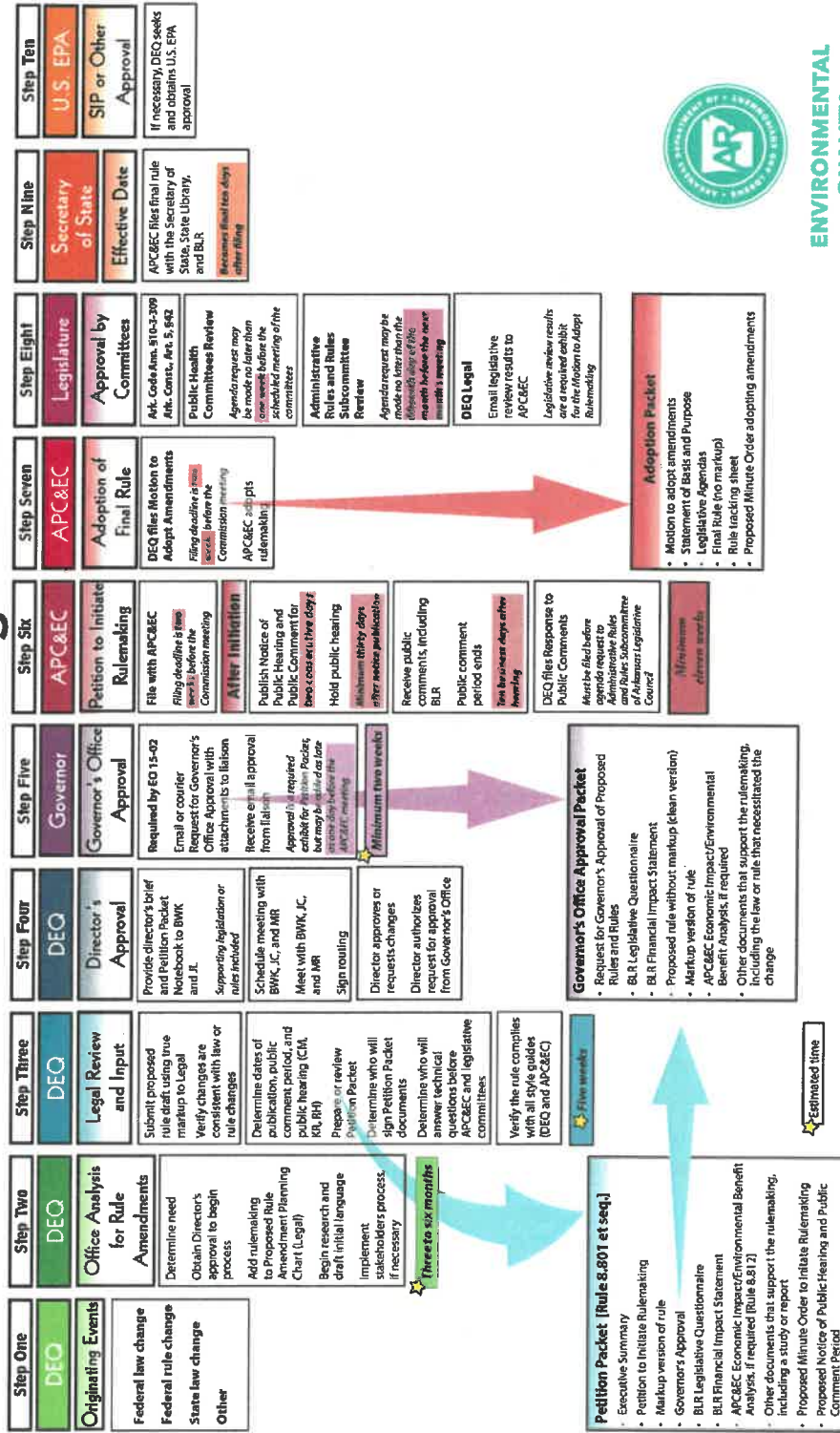


EXHIBIT D – 2004 Turbidity Determination Document

**DETERMINATION OF TURBIDITY VALUES
FOR COMMON STORM EVENTS**

The following tables are data from Arkansas' ambient water quality and roving water quality monitoring networks, and represent extraction of turbidity data from monitoring stations from the Channel-Altered Delta ecoregion streams, and from the Red River, St. Francis River, and Mississippi River. A few stations located below major point source discharges were excluded. These data are from 49 stations sampled either monthly or bi-monthly for the either the last 5-year or 10-year period. The objective of this data collection was to establish turbidity values that would not be expected to be exceeded during most storm events. These values would then be appropriate as in-stream standards for common, high-frequency storm events.

Data from all stations within each ecoregion or on each river were combined and the maximum, mean, minimum and selected percentiles were determined. The greatest relative difference occurred between the 90th and 95th percentile. Although the percentile data from turbidity do not necessarily represent the values which would occur during a rainfall event representing the same percentile of occurrence, the higher percentile values (i.e., greater than 90th percentile) do represent a value that is not regularly exceeded during common rainfall events. For this reason, the selection of one of the higher percentiles of the data can be appropriately used as a level not to be exceeded during regularly occurring storm events.

The mean turbidity values for each data set are very similar to the existing water quality standards. This indicates that even storm event flows over the long term do not significantly increase the average ecoregion values above the established standard. Additionally, the existing ecoregion standard is most similar to the 75th percentile of the ecoregion data. This would suggest that, of the data used, the existing ecoregion turbidity standards are exceeded about 25 percent of the time. Presumably, the majority of the exceedances are during storm event runoff.

It is recommended that the 90th percentile of the data be used as the limitation on turbidity values during storm events that occur more frequently than a one in ten-year storm event. This value represents a level that, of all data used, 90 percent were equal to or below the value. Above the 90th percentile, including the maximum, the turbidity and suspended solids values increase significantly, but occur very infrequently. This indicates that these higher percentiles are a rare occurrence and would not be appropriate levels to maintain during ordinary storm events.

CHANNEL-ALTERED DELTA	
	TURBIDITY
NUMBER OF STATIONS	38
NUMBER OF DATA POINTS	502
MAXIMUM	1220
MEAN	94.45
MINIMUM	1.3
15th PERCENTILE	13
50th PERCENTILE	42.1
75th PERCENTILE	120
90th PERCENTILE	249.9
95th PERCENTILE	310
SUGGESTED STANDARD	250

RED RIVER	
	10-years
NUMBER OR STATIONS	4
NUMBER OF DATA POINTS	404
MAXIMUM	620
MEAN	62.02
MINIMUM	4.2
15th PERCENTILE	18
50th PERCENTILE	41
75th PERCENTILE	74
90th PERCENTILE	139
95th PERCENTILE	190
SUGGESTED STANDARD	150

SAINT FRANCIS RIVER	
	TURBIDITY
NUMBER OF STATIONS	5
NUMBER OF DATA POINTS	136
MAXIMUM	690
MEAN	57.56
MINIMUM	3.5
15th PERCENTILE	14
50th PERCENTILE	32.5
75th PERCENTILE	53.5
90th PERCENTILE	110
95th PERCENTILE	207.5
SUGGESTED STANDARD	100

MISSISSIPPI RIVER	
	TURBIDITY
NUMBER OF STATIONS	2
NUMBER OF DATA POINTS	45
MAXIMUM	360
MEAN	81
MINIMUM	15
15th PERCENTILE	21.2
50th PERCENTILE	50
75th PERCENTILE	100
90th PERCENTILE	152
95th PERCENTILE	306
SUGGESTED STANDARD	75

BEFORE THE ARKANSAS POLLUTION CONTROL AND ECOLOGY COMMISSION

IN THE MATTER OF AMENDMENTS TO)
RULE 2, RULE ESTABLISHING)
WATER QUALITY STANDARDS FOR SURFACE)
WATERS OF THE STATE OF ARKANSAS)

DOCKET NO. 20-004-R

RECEIVED

FEB 10 2022

BUREAU OF LEGISLATIVE RESEARCH

ARKANSAS DEPARTMENT OF ENVIRONMENTAL QUALITY'S
SUPPLEMENT TO RESPONSIVE SUMMARY

Supplemental Response to EPA's Comments on Coffee Creek and Mossy Lake:

Pursuant to the federal Clean Water Act and in compliance with applicable federal regulations, DEQ regularly conducts a "triennial review" of Rule 2 and statewide water quality standards to determine whether modifications are appropriate and propose such changes to the APC&EC for adoption. The current rulemaking before the Commission is a result of the triennial review cycle begun in 2017 and the petition to initiate rulemaking filed in June 2020.

Before DEQ filed its petition to finalize the current rulemaking in August 2021, it provided EPA Region 6's Water Division with a copy of DEQ's response to comments filed by EPA Region 6 related to Coffee Creek and Mossy Lake. In response, EPA Region 6 Water Division Director Charles Maguire sent a letter dated August 23, 2021 to APC&EC Chair Richard Roper with concerns regarding the treatment of Coffee Creek and Mossy Lake in the proposed rulemaking.

On October 13, 2021, DEQ staff met with representatives from EPA Region 6 and EPA's External Civil Rights Compliance Office (ECRCO) and presented the reasoning and factual basis for DEQ's response to EPA's comment on Coffee Creek and Mossy Lake. ECRCO's participation was related to the Informal Resolution Agreement between DEQ and ECRCO that resolved EPA Complaint No. 27R-16-R6 9(IRA), executed in January of 2021, where DEQ committed (A) to provide its response to EPA's comments on Mossy Lake and Coffee Creek prior to filing the petition to adopt Rule 2 and (B) to include a representative from the Crossett Community and EPA Region 6 in the triennial review that is to be completed in 2023. Both DEQ and ECRCO agree that providing the Crossett Community with the opportunity for meaningful involvement in the 2023 triennial review comports with the letter and spirit of the IRA in addition to the Clean Water Act, Title VI, and Arkansas law.

On October 19, 2021, DEQ met with EPA Region 6 in Dallas to discuss EPA Region 6's concerns about DEQ response to EPA's comment on Coffee Creek and Mossy Lake. At that meeting, DEQ reiterated its reasoning and factual basis and explained that the changes that EPA Regions 6 requested in its letter to the Commission risk violating APC&EC Rules and potentially violating the due process rights of stakeholders including the Crossett community, the City of Crossett, and Georgia Pacific. The public comment period for the current rulemaking on Rule 2 had ended on September 8, 2020. At the time the IRA was executed in January 2021, the next step in the process was final approval of the pending rulemaking by the Commission. DEQ also explained that its response to EPA's comment on Coffee Creek and Mossy Lake was an attempt

to satisfy most of EPA's concerns within the confines of the almost completed rulemaking process. DEQ expressed its concern that a premature decision predicated on EPA Region 6's current request could also conflict with both the letter and the spirit of DEQ's agreement with ECRCO. DEQ reiterated this concern to ECRCO during an October 27, 2021 meeting on a related topic.

DEQ has a responsibility to stakeholders concerned with other issues in the current rulemaking that have no involvement with the issues related to Coffee Creek and Mossy Lake. Those stakeholders are waiting on DEQ to complete the rulemaking for Rule 2. Issues related to Coffee Creek and Mossy Lake should not prevent the changes important to the other stakeholders from moving forward.

At the October 19, 2021 meeting, EPA Region 6 expressed its concerns about DEQ's revisions to Rule 2 in response to EPA's comments on Coffee Creek and Mossy Lake. After considering EPA's concerns, DEQ now agrees with EPA that the proposed changes related to Mossy Lake and Coffee Creek should not move forward at this time.

DEQ is committed to ensuring full compliance with existing and applicable administrative processes and procedures to allow full and meaningful engagement and informed participation with all stakeholders including EPA, members of the Crossett community, the City of Crossett, Georgia Pacific, and DEQ before making any final decision on the Coffee Creek and Mossy Lake issues. These stakeholders have a vested interest in resolving the Mossy Lake and Coffee Creek issues, and DEQ believes that meaningful involvement for all of these parties must be provided in the process of addressing EPA's concerns via the upcoming triennial review process. Stakeholder meetings are set to begin in March of 2022. Addressing Mossy Lake and Coffee Creek directly through this process comports with both the letter and the spirit of the IRA signed by DEQ and ECRCO.

In response to EPA Region 6's request, DEQ has removed those changes to Rule 2. Specifically, DEQ removed the proposed footnote describing Mossy Lake and the proposed footnote that describes Coffee Creek. DEQ reiterates its commitment to ensuring full compliance with existing and applicable administrative processes and procedures to allow full and meaningful engagement and informed participation with all stakeholders.

DEQ is obliged to move forward with the current rulemaking's changes to Rule 2 that are not related to Coffee Creek and Mossy Lake to meet its commitment to the other stakeholders engaged in this rulemaking process. This discrete issue should not impair the rights of other stakeholders. If it did impair their rights, those stakeholders would have cause to question both DEQ's and EPA's commitment to the meaningful engagement required by Arkansas law and the Clean Water Act.

DEQ, by this supplemental response, commits to hold a public meeting with the Crossett community to discuss Mossy Lake and Coffee Creek and changes to APC&EC Rule 2 for the triennial review to be completed in 2023. This meeting is set to take place in conjunction with the other stakeholder meetings that will begin in March 2022 as part of the triennial review process to be completed in 2023.

DEQ acknowledges the necessity and importance of including the City of Crossett and Georgia Pacific in this conversation as the City's municipal wastewater is currently treated, in part, by Georgia Pacific's wastewater treatment system. DEQ believes that changes to Rule 2 that alter the current status of Coffee Creek and Mossy Lake could result in significant changes for the City of Crossett and for Georgia Pacific. Failing to include representatives of the Crossett community, the City of Crossett, and Georgia Pacific along with EPA and DEQ in these discussions prevents the meaningful involvement required by both federal and Arkansas law.

Respectfully Submitted,

By: 

Basil V. Hicks III
Attorney for Division of
Environmental Quality
5301 Northshore Drive
North Little Rock, Arkansas 72218
(501) 682-0884

ARKANSAS POLLUTION CONTROL AND ECOLOGY COMMISSION



REGULATION NO. 2

REGULATION ESTABLISHING WATER QUALITY STANDARDS FOR SURFACE WATERS OF THE STATE OF ARKANSAS

FILED
AR REGISTER DIV.
2020 FEB -3 PM 1:44
STATE OF ARKANSAS
BY

Adopted by the Arkansas Pollution Control and Ecology Commission: January 24, 2020

Arkansas Pollution Control and Ecology Commission
Regulation No. 2, As Amended

**Regulation Establishing
Water Quality Standards for Surface Waters
of the State of Arkansas**

TABLE OF CONTENTS

CHAPTER 1: AUTHORITY, GENERAL PRINCIPLES, AND COVERAGE	1-1
Reg. 2.101 Authority	1-1
Reg. 2.102 Purpose	1-1
Reg. 2.103 Commission Review	1-2
Reg. 2.104 Policy for Compliance.....	1-2
Reg. 2.105 Environmental Improvement Projects.....	1-2
Reg. 2.106 Definitions.....	1-2
CHAPTER 2: ANTIDegradation Policy	2-1
Reg. 2.201 Existing Uses.....	2-1
Reg. 2.202 High Quality Waters.....	2-1
Reg. 2.203 Outstanding Resource Waters	2-1
Reg. 2.204 Thermal Discharges.....	2-1
CHAPTER 3: WATERBODY USES.....	3-1
Reg. 2.301 Introduction	3-1
Reg. 2.302 Designated Uses	3-1
Reg. 2.303 Use Attainability Analysis	3-5
Reg. 2.304 Physical Alteration of Habitat.....	3-6
Reg. 2.305 Short Term Activity Authorization	3-6
Reg. 2.306 Procedures for Removal of Any Designated Use Except Fishable/Swimmable, Extraordinary Resource Water, Ecologically Sensitive Waterbody, or Natural and Scenic Waterway, and Modification of Water Quality Criteria not Related to These Uses	3-7
Reg. 2.307 Use Subcategories	3-8
Reg. 2.308 Site Specific Criteria	3-8
Reg. 2.309 Temporary Variance.....	3-8
Reg. 2.310 Procedure for the Removal of the Designated Use of Extraordinary Resource Water, or Ecologically Sensitive Waterbody, or Natural and Scenic Waterway for the Purpose of Constructing a Reservoir on a Free Flowing Waterbody to Provide a Domestic Water Supply. .	3-8
Reg. 2.311 Procedure for the Addition of the Designated Use of Extraordinary Resource Water, or Ecologically Sensitive Waterbody, or Natural and Scenic Waterway to a Waterbody or Segment of a Waterbody. .	3-10
CHAPTER 4: GENERAL STANDARDS.....	4-1
Reg. 2.401 Applicability.....	4-1
Reg. 2.402 Nuisance Species.....	4-1
Reg. 2.403 Methods.....	4-1

Reg. 2.404	Mixing Zones	4-1
Reg. 2.405	Biological Integrity	4-2
Reg. 2.406	Color.....	4-2
Reg. 2.407	Taste and Odor	4-2
Reg. 2.408	Solids, Floating Material and Deposits	4-2
Reg. 2.409	Toxic Substances.....	4-3
Reg. 2.410	Oil and Grease.....	4-3
CHAPTER 5: SPECIFIC STANDARDS		5-1
Reg. 2.501	Applicability.....	5-1
Reg. 2.502	Temperature	5-1
Reg. 2.503	Turbidity.....	5-2
Reg. 2.504	pH.....	5-2
Reg. 2.505	Dissolved Oxygen	5-2
Reg. 2.506	Radioactivity	5-4
Reg. 2.507	Bacteria.....	5-4
Reg. 2.508	Toxic Substances.....	5-5
Reg. 2.509	Nutrients	5-7
Reg. 2.510	Oil and Grease.....	5-8
Reg. 2.511	Mineral Quality	5-9
Reg. 2.512	Ammonia.....	5-13
CHAPTER 6: EFFECTIVE DATE		6-1
APPENDIX A: MAP OF ECOREGIONS OF ARKANSAS.....		A-2
	Index to Plates of the Ozark Highlands.....	A-2
	DESIGNATED USES: OZARK HIGHLANDS ECOREGION.....	A-3
	SPECIFIC STANDARDS: OZARK HIGHLANDS ECOREGION.....	A-4
	Index to Plates of the Boston Mountains.....	A-10
	DESIGNATED USES: BOSTON MOUNTAINS ECOREGION.....	A-11
	SPECIFIC STANDARDS: BOSTON MOUNTAINS ECOREGION.....	A-12
	Index to Plates of the Arkansas River Valley.....	A-16
	DESIGNATED USES: ARKANSAS RIVER VALLEY ECOREGION	A-17
	SPECIFIC STANDARDS: ARKANSAS RIVER VALLEY ECOREGION.....	A-18
	Index to Plates of the Ouachita Mountains.....	A-22
	DESIGNATED USES: OUACHITA MOUNTAIN ECOREGION	A-23
	SPECIFIC STANDARDS: OUACHITA MOUNTAIN ECOREGION	A-24
	Index to Plates of the Gulf Coastal Plain.....	A-28
	DESIGNATED USES: GULF COASTAL ECOREGION	A-29
	SPECIFIC STANDARDS: GULF COASTAL ECOREGION.....	A-31
	Index to Plates of the Delta	A-38
	DESIGNATED USES: DELTA ECOREGION.....	A-39
	SPECIFIC STANDARDS: DELTA ECOREGION.....	A-40
APPENDIX B: ENVIRONMENTAL IMPROVEMENT PROJECT.....		B-3
APPENDIX C: SCIENTIFIC NAMES OF AQUATIC BIOTA		C-3
APPENDIX D: LIST OF CURRENT EXTRAORDINARY RESOURCE WATERS, ECOLOGICALLY SENSITIVE WATERBODIES, AND NATURAL AND SCENIC WATERWAYS		D-1
APPENDIX E: CRITERIA TO BE CONSIDERED IN DETERMINING WHETHER THE		

DESIGNATED USE OF EXTRAORDINARY RESOURCE WATER,
ECOLOGICALLY SENSITIVE WATERBODY, OR NATURAL AND
SCENIC WATERWAY SHOULD BE MAINTAINED.....E-3

APPENDIX F: FACTORS CONSIDERED IN ADDING THE DESIGNATED USE OF
EXTRAORDINARY RESOURCE WATER, ECOLOGICALLY SENSITIVE
WATERBODY, OR NATURAL AND SCENIC WATERWAY TO A
WATERBODY OR WATERBODY SEGMENT F-3

**ARKANSAS
POLLUTION CONTROL
AND ECOLOGY COMMISSION**

Regulation No. 2, As Amended

**Regulation Establishing
Water Quality Standards for Surface Waters
of the State of Arkansas**

CHAPTER 1: AUTHORITY, GENERAL PRINCIPLES, AND COVERAGE

Reg. 2.101 Authority

Pursuant to the Arkansas Water and Air Pollution Control Act, (Ark. Code Ann. § 8-4-101 *et seq.*), and in compliance with the requirements of the Federal Water Pollution Control Act, 33 U.S.C. § 1251 *et seq.*, (hereinafter “Clean Water Act”), the Arkansas Pollution Control and Ecology Commission (hereinafter “Commission”) hereby promulgates this regulation establishing water quality standards for all surface waters, interstate and intrastate, of the State of Arkansas.

Reg. 2.102 Purpose

The water quality standards herein set forth are based upon present, future and potential uses of the surface waters of the State and criteria developed from statistical evaluations of past water quality conditions and a comprehensive study of least-disturbed, ecoregion reference streams. The standards are designed to enhance the quality, value, and beneficial uses of the water resources of the State of Arkansas, to aid in the prevention, control and abatement of water pollution, to provide for the protection and propagation of fish and wildlife and to provide for recreation in and on the water. In establishing these standards, the Commission has taken into consideration the use and value of the streams for public water supplies, commercial, industrial and agricultural uses, aesthetics, recreational purposes, propagation of fish and wildlife, other beneficial uses, and views expressed at public hearings. The State of Arkansas has an exceptionally large volume of high quality water. With few exceptions the streams and lakes of Arkansas contain waters of a quality suitable for all legitimate uses without the necessity of unreasonable water treatment. Where man-made pollution exists, substantial progress has been made in abatement. It is the purpose of these regulations to preserve and protect the quality of this water so that it shall be reasonably available for all beneficial uses and thus promote the social welfare and economic well-being of the people of the State. It is further the purpose of these regulations to designate the uses for which the various waters of the State shall be maintained and protected; to prescribe the water quality standards required to sustain the designated uses; and to prescribe regulations necessary for implementing, achieving and maintaining the prescribed water quality.

Reg. 2.103 Commission Review

The water quality standards herein established will be reviewed by the Commission at least once each three-year period beginning as of October 18, 1972. Revisions may be made to take into account changing technology of waste production, treatment and removal, advances in knowledge of water quality requirements, and other relevant factors.

Reg. 2.104 Policy for Compliance

It shall be the policy of the Arkansas Department of Environmental Quality (hereinafter "Department") to provide, on a case-by-case basis, a reasonable time for an existing permittee to comply with new or revised water quality based effluent limits. Consequently, compliance schedules may be included in National Pollutant Discharge Elimination System (NPDES) permits at the time of renewal or permit modification initiated by the Department to require compliance with new water quality standards. Compliance must occur at the earliest practicable time, but not to exceed three years from effective date of permit, unless the permittee is completing site specific criteria development or is under a plan approved by the Department, in accordance with Regs. 2.306, 2.308, and the State of Arkansas Continuing Planning Process.

Reg. 2.105 Environmental Improvement Projects

The Commission may, after consideration of information provided pursuant to Appendix B and Ark. Code Ann. § 8-5-901 *et seq.*, grant modifications to the General and Specific Standards or establish a subcategory(ies) of use(s) for completion of long-term Environmental Improvement Projects.

Reg. 2.106 Definitions

304(a) Guidance: Refers to Section 304(a) of the Clean Water Act, 33 U.S.C. § 1314(a), which requires the United States Environmental Protection Agency to publish and periodically update ambient water quality criteria which will be protective of human health and the environment.

Abatement: The reduction in degree or intensity of pollution.

Acute toxicity: A statistically significant difference (at the 95 percent confidence level) in mortality or immobilization between test organisms and a control measured during a specified period of time which is normally less than 96 hours.

Algae: Simple plants without roots, stems, or leaves that contain chlorophyll and are capable of photosynthesis.

All flows: Takes into account all flows and data collected throughout the year, including elevated flows due to rainfall events.

Aquatic biota: All those life forms which inhabit the aquatic environment.

Aquatic life: The designated use of a waterbody determined by the fish community and other associated aquatic biota.

Base flows: That portion of the stream discharge that is derived from natural storage (i.e., outflow from groundwater or swamps), or sources other than recent rainfall that creates surface runoff. Also called sustaining, normal, dry weather, ordinary, or groundwater flow.

Bioaccumulation: The process by which a compound is taken up by an aquatic organism, both from water and through food.

Chronic toxicity: A statistically significant difference (at the 95 percent confidence level) in mortality or immobilization, reduced reproduction or limited growth between test organisms and a control measured during a substantial segment of the life span of the test organism.

Commission: The Arkansas Pollution Control and Ecology Commission.

Conventional pollutants: Pursuant to section 304(a)(4) of the Clean Water Act, 33 U.S.C. § 1314(a)(4), includes biochemical oxygen demand (BOD), total suspended solids (nonfilterable) (TSS), pH, fecal coliform, and oil and grease.

Criterion continuous concentration (CCC): An estimate of the highest concentration of a material in ambient water to which an aquatic community can be *exposed indefinitely* without resulting in an unacceptable adverse effect. This is the chronic criterion.

Criterion maximum concentration (CMC): An estimate of the highest concentration of a material in ambient water to which an aquatic community can be *exposed briefly* without resulting in an unacceptable adverse effect. This is the acute criterion.

Critical flows: The flow volume used as background dilution flows in calculating concentrations of pollutants from permitted discharges. These flows may be adjusted for mixing zones. The following critical flows are applicable:

For a seasonal aquatic life - 1 cubic foot per second minus the design flow of any point source discharge (may not be less than zero);

For human health - harmonic mean flow or long term average flow;

For minerals - harmonic mean flow, except as follows:

- Reg. 2.511(A) Site Specific Mineral Criteria listed with an asterisk- 4 cubic feet per second.
- Reg. 2.511 (C) Domestic Water Supply: Q7-10; and

For metals and conventional pollutants - Q7-10.

Critical season: That period of the year when water temperatures exceed 22°C. This is normally the hot, dry season and after the majority of the fish spawning activities have ceased. This season occurs during a different time frame in different parts of the state, but normally exists from about mid-May to mid-September.

Cumulative: Increasing by successive additions.

Department: The Arkansas Department of Environmental Quality or its successor.

Degradation: The act or process of causing any decrease in quality.

Design flow: A facility discharge flow of process wastewater that is authorized in a NPDES permit.

Designated uses: Those uses specified in the water quality standards for each waterbody or stream segment whether or not they are being attained.

Discharge: A discrete point source of waste or wastewater entering into waters of the State.

Dissolved oxygen (DO): A measure of the concentration of oxygen in solution in a liquid.

Ecoregion: A large area of landscape with relatively homogenous physical, chemical and biological characteristics.

Escherichia coli: A rod shaped gram negative bacillus (0.5 – 3-5 microns) abundant in the large intestines of mammals.

Endemic: Native to and confined to a specific region.

Existing uses: Those uses listed in Section 303(c)(2) of the Clean Water Act, 33 U.S.C. § 1313(c)(2) (i.e., public water supplies, propagation of fish and wildlife, recreational uses, agricultural and industrial water supplies, and navigation), which were actually attained in the waterbody on or after November 28, 1975, whether or not they are included in the water quality standards.

Fecal coliform bacteria: Gram-negative nonspore-forming rods that ferment lactose in 24 ± 2 hours at 44.5 ± 0.2 °C with the production of gas in a multiple-tube procedure or produce acidity with blue colonies in a membrane filter procedure. For the purpose of this regulation, the genus *Klebsiella* is not included in this definition.

Fishable/swimmable: Refers to one of the national goals stated in Section 101(a)(2) of the Clean Water Act, 33 U.S.C. § 1251(a)(2) ,“...provides for the protection and propagation of fish, shellfish and wildlife and provides for recreation in and on the water.”

Groundwater: Water below the land surface in a zone of saturation.

Hardness: A measure of the sum of multivalent metallic cations expressed as calcium carbonate (CaCO₃).

Harmonic mean flow: The reciprocal of the mean of the reciprocals of daily flow measurements.

Headwater: The upper watershed area where streams generally begin; typically consists of 1st- and 2nd-order streams.

Heavy metals: A general name given to the ions of metallic elements heavier than iron, such as cadmium, lead, mercury, copper, zinc and chromium.

Human health criteria: Levels of toxicants in ambient water which will not manifest adverse health effects in humans.

Hypolimnion: That portion of a thermally stratified lake or reservoir below the zone in which the rate of temperature change is greatest. An area of minimal circulation and mixing.

Impairment: Exceedences of the water quality standards by a frequency and/or magnitude which results in any designated use of a waterbody to fail to be met as a result of physical, chemical or biological conditions.

Indicator species: Species of fish which may not be dominant within a species group and may not be limited to one area of the state, but which, because of their presence, are readily associated with a specific ecoregion. All indicator species need not be present to establish a normal or representative fishery.

Indigenous: Produced, growing or living naturally in a particular region or environment.

Interstate: Of, connecting, or existing between two or more states.

Intrastate: Existing or occurring within a state.

Ionizing radiation: Gamma rays and x-rays; alpha and beta particles, high speed electrons, neutrons, protons and other nuclear particles; but not sound or radio waves, or visible, infrared or ultraviolet light.

Key species: Fishes which are normally the dominant species (except for some ubiquitous species) within the important groups such as fish families or trophic feeding levels. All specified key species need not be present to establish a normal or representative fishery.

Long term average flow: An average annual stream flow based on a period of record which reflects the typical annual variability.

Milligrams per liter (mg/L): The concentration at which one milligram is contained in a volume of one liter; one milligram per liter is equivalent to one part per million (ppm) at unit density.

Mixing zone: An area where an effluent discharge undergoes mixing with the receiving waterbody. For toxic discharges a zone of initial dilution may be allowed within the mixing zone.

Mouth: The point of confluence where a stream enters a larger body of water.

Natural background: Ambient conditions or concentrations of a parameter due to non-anthropogenic sources; natural background does not typically interfere with support of designated uses nor the level of aquatic biota expected to occur naturally at the site.

Naturally occurring excursions: Temporary deviation from natural background due to natural events such as severe storm events, drought, temperature extremes, etc.

Nephelometric turbidity unit (NTU): A measure of turbidity based upon a comparison of the intensity of light scattered by a sample of water under defined conditions with the intensity of light scattered by a standard reference suspension; NTU are considered comparable to the previously reported Jackson Turbidity Units (JTU). May also be reported as Formazin Turbidity Units (FTU) in equivalent units.

Nonpoint source: A contributing factor to water pollution that is not confined to an end-of-the-pipe discharge, i.e., stormwater runoff not regulated under Clean Water Act § 402(p)(1), 33 U.S.C. § 1342(p), agricultural or silvicultural runoff, irrigation return flows, etc.

Nuisance species: Those organisms capable of interfering with the beneficial use of water.

Nutrient: Any substance assimilated by an organism which promotes growth and replacement of cellular constituents. The usual nutrient components of water pollution are nitrogen, phosphorus and carbon.

Objectionable algal densities: Numbers of total algae which would interfere with a beneficial use.

Persistent: Degraded only slowly by the environment.

pH: The negative logarithm of the effective hydrogen-ion concentration in gram equivalents per liter.

Picocurie: One trillionth (10^{-13}) of a curie which is a unit of quantity of any radioactive nuclide in which 3.7×10^{10} disintegrations occur per second.

Point source: A discharge from a discrete point.

Primary season: That period of the year when water temperatures are 22°C or below. This includes the major part of the year from fall through spring, including the spawning season of most fishes. It normally occurs from about mid-September to mid-May.

Q7-10: A flow volume equal to or less than the lowest mean discharge during 7 consecutive days of a year which, on the average, occurs once every 10 years.

Regulated-flow stream: Those streams restricted by structures which have the ability to control stream flow.

Seasonal aquatic life: The designated aquatic life use that occurs in some waterbodies only during the period when stream flows increase substantially and water temperatures are cooler. This is normally during the months of December through May.

State of Arkansas Continuing Planning Process: A document setting forth the principal procedures of the State's water quality management programs, developed pursuant to Section

303(e) of the Clean Water Act, 33 U.S.C. 1313(e), and 40 C.F.R. § 130.5. The CPP is not a regulation.

Surface water: That water contained on the exterior or upper portion of the earth's surface as opposed to groundwater.

Synergism: Cooperative action of discrete agents such that the total effect is greater than the sum of the effects taken independently.

Total dissolved solids (TDS): The total soluble organic and inorganic material contained in water; includes those materials, both liquid and solid, in solution and otherwise, which pass through a standard glass fiber filter disk and are not volatilized during drying at 180°C.

Trout fishery: Water which is suitable for the growth and survival of trout, usually characterized as high quality water having a maximum summer temperature of 68°F or less.

Use attainability analysis: A structured scientific assessment of the factors affecting the attainment of the fishable/swimmable use which may include physical, chemical, biological and economic factors.

Waterbodies, waterways, waters: In this document, refers to surface waters of the State as described in Act 472.

Water effects ratio (WER): A specific pollutant's acute or chronic value measured from a specific site ambient water, divided by the respective acute or chronic toxicity of the same pollutant in laboratory water.

Zone of initial dilution (ZID): An area within the mixing zone where a toxic effluent discharge initiates mixing in the receiving waterbody. This is an area where acute water quality criteria may be exceeded, but acute toxicity may not occur.

CHAPTER 2: ANTIDEGRADATION POLICY

Reg. 2.201 Existing Uses

Existing instream water uses and the level of water quality necessary to protect the existing uses shall be maintained and protected.

Reg. 2.202 High Quality Waters

Where the quality of the waters exceeds levels necessary to support propagation of fish, shellfish and wildlife and recreation in and on the water, that quality shall be maintained and protected unless the State finds, after full satisfaction of the intergovernmental coordination and public participation provisions of the State of Arkansas' Continuing Planning Process, that allowing lower water quality is necessary to accommodate important economic or social development in the area in which the waters are located. In allowing such degradation or lower water quality, the State shall assure water quality adequate to protect existing uses fully. Further, the State shall assure that (1) there shall be achieved the highest statutory and regulatory requirements for all new and existing point sources and (2) that the provisions of the Arkansas Water Quality Management Plan be implemented with regard to nonpoint sources.

Reg. 2.203 Outstanding Resource Waters

Where high quality waters constitute an outstanding state or national resource, such as those waters designated as Extraordinary Resource Waters, Ecologically Sensitive Waterbodies or Natural and Scenic Waterways, those uses and water quality for which the outstanding waterbody was designated shall be protected by (1) water quality controls, (2) maintenance of natural flow regime, (3) protection of instream habitat, and (4) encouragement of land management practices protective of the watershed. It is not the intent of the Extraordinary Resource Waters (ERW) designated use definition to imply that ERW status dictates regulatory authority over private land within the watershed, other than what exists under local, state, or federal law. The Arkansas Natural Resources Commission has responsibility for the regulation of the withdrawal of water from streams and reservoirs, and such withdrawals are not within the jurisdiction of this regulation.

Reg. 2.204 Thermal Discharges

In those cases where potential water quality impairment associated with a thermal discharge is involved, the antidegradation policy and implementing method shall be consistent with Section 316 of the Clean Water Act, 33 U.S.C. § 1326.

CHAPTER 3: WATERBODY USES

Reg. 2.301 Introduction

Substantially all the waters of the State have been designated for specific uses as shown in Appendix A. In those instances where waters are classified for multiple uses and different criteria are specified for each use, the criteria to protect the most sensitive use shall be applicable.

Reg. 2.302 Designated Uses

The designated uses are defined as follows:

- (A) Extraordinary Resource Waters - This beneficial use is a combination of the chemical, physical and biological characteristics of a waterbody and its watershed which is characterized by scenic beauty, aesthetics, scientific values, broad scope recreation potential and intangible social values. (For specific listings, refer to Appendices A and D)
- (B) Ecologically Sensitive Waterbody - This beneficial use identifies segments known to provide habitat within the existing range of threatened, endangered or endemic species of aquatic or semi-aquatic life forms. (For specific listings, refer to Appendices A and D)
- (C) Natural and Scenic Waterways - This beneficial use identifies segments which have been legislatively adopted into a state or federal system. (For specific listings, refer to Appendices A and D)
- (D) Primary Contact Recreation - This beneficial use designates waters where full body contact is involved. Any streams with watersheds of greater than 10 mi² are designated for full body contact. All streams with watersheds less than 10 mi² may be designated for primary contact recreation after site verification.
- (E) Secondary Contact Recreation - This beneficial use designates waters where secondary activities like boating, fishing or wading are involved.
- (F) Aquatic Life - This beneficial use provides for the protection and propagation of fish, shellfish and other forms of aquatic biota. It is further subdivided into the following subcategories:
 - (1) Trout - Water which is suitable for the growth and survival of trout (Family: Salmonidae).
 - (2) Lakes and Reservoirs - Water which is suitable for the protection and propagation of fish and other forms of aquatic biota adapted to impounded waters. Generally characterized by a dominance of sunfishes such as bluegill or similar species, black basses and crappie. May include substantial

populations of catfishes such as channel, blue and flathead catfish and commercial fishes including carp, buffalo and suckers. Forage fishes are normally shad or various species of minnows. Unique populations of walleye, striped bass and/or trout may also exist.

(3) Streams - Water which is suitable for the protection and propagation of fish and other forms of aquatic biota adapted to flowing water systems whether or not the flow is perennial.

(a) Ozark Highlands Ecoregion - Streams supporting diverse communities of indigenous or adapted species of fish and other forms of aquatic biota. Fish communities are characterized by a preponderance of sensitive species and normally dominated by a diverse minnow community followed by sunfishes and darters. The community may be generally characterized by the following fishes:

Key Species	Indicator Species
Duskystripe, Bleeding or Cardinal shiner	Banded sculpin
Northern hogsucker	Ozark madtom
Slender madtom	Southern redbelly dace
"Rock" basses	Whitetail shiner
Rainbow and/or Orangethroat darters	Ozark minnow
Smallmouth bass	

(b) Boston Mountains Ecoregion - Streams supporting diverse communities of indigenous or adapted species of fish and other forms of aquatic biota. Fish communities are characterized by a major proportion of sensitive species; a diverse, often darter-dominated community exists but with nearly equal proportions of minnows and sunfishes. The community may be generally characterized by the following fishes:

Key Species	Indicator Species
Bigeye shiner	Shadow bass
Black redbelt	Wedgespot shiner
Slender madtom	Longnose darter
Longear sunfish	Fantail darter
Greenside darter	
Smallmouth bass	

(c) Arkansas River Valley Ecoregion - Streams supporting diverse communities of indigenous or adapted species of fish and other forms of aquatic biota. Fish communities are characterized by a substantial proportion of sensitive species; a sunfish- and minnow-dominated

community exists but with substantial proportions of darters and catfishes (particularly madtoms). The community may be generally characterized by the following fishes:

Key Species

Bluntnose minnow
 Golden redhorse
 Yellow bullhead
 Longear sunfish
 Redfin darter
 Spotted bass

Indicator Species

Orangespotted sunfish
 Blackside darter
 Madtoms

- (d) Ouachita Mountains Ecoregion - Streams supporting diverse communities of indigenous or adapted species of fish and other forms of aquatic biota. The fish community is characterized by a major proportion of sensitive species; a minnow-sunfish-dominated community exists, followed by darters. The community may be generally characterized by the following fishes:

Key Species

Bigeye shiner
 Northern hogsucker
 Freckled madtom
 Longear sunfish
 Orangebelly darter
 Smallmouth bass

Indicator Species

Shadow bass
 Gravel chub
 Northern studfish
 Striped shiner

- (e) Typical Gulf Coastal Ecoregion - Streams supporting diverse communities of indigenous or adapted species of fish and other forms of aquatic biota. Fish communities are characterized by a limited proportion of sensitive species; sunfishes are distinctly dominant followed by darters and minnows. The community may be generally characterized by the following fishes:

Key Species

Redfin shiner
 Spotted sucker
 Yellow bullhead
 Warmouth
 Slough darter
 Redfin pickerel

Indicator Species

Pirate perch
 Flier
 Spotted sunfish
 Dusky darter
 Creek chubsucker
 Banded pygmy sunfish

- (f) Springwater-influenced Gulf Coastal Ecoregion - Streams supporting diverse communities of indigenous or adapted species of fish and other forms of aquatic biota. Fish communities are characterized by a

substantial proportion of sensitive species; sunfishes normally dominate the community and are followed by darters and minnows. The community may be generally characterized by the following fishes:

Key Species

Redfin shiner
 Blacktail redhorse
 Freckled madtom
 Longear sunfish
 Creole darter
 Redfin pickerel

Indicator Species

Pirate perch
 Golden redhorse
 Spotted bass
 Scaly sand darter
 Striped shiner
 Banded pygmy sunfish

- (g) Least-altered Delta Ecoregion - Streams supporting diverse communities of indigenous or adapted species of fish and other forms of aquatic biota. Fish communities are characterized by an insignificant proportion of sensitive species; sunfishes are distinctly dominant followed by minnows. The community may be generally characterized by the following fishes:

Key Species

Ribbon shiner
 Smallmouth buffalo
 Yellow bullhead
 Bluegill
 Bluntnose darter
 Largemouth bass

Indicator Species

Pugnose minnow
 Mosquitofish
 Pirate perch
 Tadpole madtom
 Banded pygmy sunfish

- (h) Channel-altered Delta Ecoregion - Streams supporting diverse communities of indigenous or adapted species of fish and other forms of aquatic biota. Fish communities are characterized by an absence of sensitive species; sunfishes and minnows dominate the population followed by catfishes. The community may be generally characterized by the following fishes:

Key Species

Blacktail shiner
 Drum
 Carp
 Channel catfish
 Green sunfish
 Spotted gar

Indicator Species

Mosquitofish
 Gizzard shad
 Emerald shiner

- (G) Domestic Water Supply - This beneficial use designates water which will be protected for use in public and private water supplies. Conditioning or treatment may be necessary prior to use.

- (H) Industrial Water Supply - This beneficial use designates water which will be protected for use as process or cooling water. Quality criteria may vary with the specific type of process involved and the water supply may require prior treatment or conditioning.
- (I) Agricultural Water Supply - This beneficial use designates waters which will be protected for irrigation of crops and/or consumption by livestock.
- (J) Other Uses - This category of beneficial use is generally used to designate uses not dependent upon water quality, such as hydroelectric power generation and navigation.

Reg. 2.303 Use Attainability Analysis

- (A) A use attainability analysis must be conducted to justify the following conditions:
 - (1) Removing a fishable/swimmable designated use, which is not an existing use, from a waterbody; or
 - (2) To identify a subcategory of a fishable/swimmable use which requires less stringent criteria.
- (B) In order to remove a designated fishable/swimmable use, which is not an existing use, or identify subcategories of a fishable/swimmable use which require less stringent criteria, it must be demonstrated that the designated use is not attainable because:
 - (1) naturally occurring pollutant concentrations prevent the attainment of the use; or
 - (2) natural, ephemeral, intermittent or low flow conditions or water levels prevent the attainment of the use, unless these conditions may be compensated for by the discharge of sufficient volume of effluent discharges without violating State water conservation requirements to enable uses to be met; or
 - (3) human caused conditions or sources of pollution prevent attainment of the use and cannot be remedied or would cause more environmental damage to correct than leave in place; or
 - (4) dams, diversions or other types of hydrologic modifications preclude the attainment of the use, and it is not feasible to restore the water body to its original condition or to operate such modification in a way that would result in the attainment of the use; or
 - (5) physical conditions related to the natural features of a water body, such as lack of a proper substrate, cover, flow, depth, pools, riffles, and the like, unrelated to water quality, preclude attainment of aquatic life protection uses; or

- (6) controls more stringent than those required by Section 301(b) and 306 of the Clean Water Act would result in substantial and widespread economic and social impact.

The scope of a use attainability analysis shall be in direct proportion to the project involved and the resource value of the receiving stream. Methods for conducting a use attainability analysis may be found in the November 1983 United States Environmental Protection Agency publication entitled *Technical Support Manual: Waterbody Surveys and Assessments for Conducting Use Attainability Analyses*. Other scientific methods, including the use of existing technical data, may be used for justifying the removal of a designated use; provided the methods are agreed upon prior to the study. Such other methods may include the use of information previously gathered through technical studies and/or use attainability analysis. Use attainability analysis procedures may be found in the State of Arkansas Continuing Planning Process document. Any waterbody on which a use attainability analysis is approved shall be so listed in Appendix A with appropriate criteria.

Reg. 2.304 Physical Alteration of Habitat

Significant physical alterations of the habitat within Extraordinary Resource Waters, Ecologically Sensitive Waterbodies or Natural and Scenic Waterways are not allowed. In other waters, where significant physical alterations of the habitat are proposed, the Department must be assured that no significant degradation of any existing use or water quality necessary to protect that use will occur. In order to make such determinations, the Department may require an evaluation of all practicable alternatives to the project including: an environmental assessment of the impacts of each alternative, an engineering and economic analysis, and a socio-economic evaluation of the project in the local area.

Reg. 2.305 Short Term Activity Authorization

The Director may authorize, with whatever conditions deemed necessary and without public notice, short term activities which might cause a violation of the Arkansas Water Quality Standards. This authorization is subject to the provisions that such activity is essential to the protection or promotion of the public interest and that no permanent or long-term impairment of beneficial uses is likely to result from such activity. Nothing herein shall be intended to supersede existing state and federal permitting processes or requirements.

Activities eligible for authorization include, but are not limited to:

- (A) wastewater treatment facility maintenance;
- (B) fish eradication projects;
- (C) mosquito abatement projects;
- (D) algae and weed control projects;
- (E) dredge and fill projects;

- (F) construction activities; or
- (G) activities which result in overall enhancement or maintenance of beneficial uses.

The Director shall specify the degree of variance from the standards, the time limit of activity and restoration procedures where applicable.

Such authorization shall not be granted for activities which result in the adverse impact on any federally threatened or endangered species or on critical habitat of such species.

Reg. 2.306 Procedures for Removal of Any Designated Use Except Fishable/Swimmable, Extraordinary Resource Water, Ecologically Sensitive Waterbody, or Natural and Scenic Waterway, and Modification of Water Quality Criteria not Related to These Uses

This procedure is applicable in those cases where the Commission chooses to establish less stringent water quality criteria without affecting a fishable/swimmable use or the designated use of Extraordinary Resource Water or Ecologically Sensitive Waterbody or Natural and Scenic Waterway, or when the Commission chooses to remove a use which is not an existing use other than fishable/swimmable, Extraordinary Resource Water, Ecologically Sensitive Waterbody, or Natural and Scenic Waterway.

The Commission may allow a modification of the water quality criteria or the removal of a use which is not a fishable/swimmable use or designated use of Extraordinary Resource Water or Ecologically Sensitive Waterbody or Natural and Scenic Waterway to accommodate important economic or social development in a local area, if existing uses are maintained and protected fully and the requirements for public participation in the State of Arkansas Continuing Planning Process are met. As a minimum, the following information shall be submitted to the Director before initiation of the public participation process:

- (A) Technological or economic limits of treatability.
- (B) Economic analysis of the impact on the local area.
- (C) Documentation that the use being removed is not an existing use and that all other designated uses will be protected.

Modifications made pursuant to this section may be required to be rejustified for continued support. As community water needs change, or technological advancement, including long-term environmental improvement projects, make treatment options more practicable, the Commission may reevaluate the need for the reestablishment of the more stringent water quality criteria or the removed use.

Any waterbody on which such alterations are approved will be so listed in Appendix A with the applicable changes noted.

Reg. 2.307 Use Subcategories

The Commission may adopt sub-categories of a use and set the appropriate criteria to reflect varying needs of such sub-categories of uses; for instance, to differentiate between cold and warm water fisheries or agricultural and domestic water supply.

Reg. 2.308 Site Specific Criteria

In establishing criteria:

- (A) Establish numerical criteria values based on:
 - (1) 304(a) Guidance; or
 - (2) 304(a) Guidance modified to reflect site conditions (i.e., Water Effects Ratio); or
 - (3) Other scientifically defensible methods;
- (B) Establish narrative criteria or criteria based upon biomonitoring methods where numerical criteria cannot be established or to supplement numerical criteria.

Reg. 2.309 Temporary Variance

A temporary variance to the water quality standards may be allowed for an existing permitted discharge facility. The variance will be for specified constituents and shall be no longer than a three year period. A variance must be approved by the Arkansas Pollution Control and Ecology Commission and the United States Environmental Protection Agency. A variance will be considered when it is determined that a standard, including designated use, can ultimately be attained or when preliminary evidence indicates that a site specific amendment of the standards may be appropriate. A variance may be granted only to the applicant and will not apply to other discharges into the specified waterbody.

Reg. 2.310 Procedure for the Removal of the Designated Use of Extraordinary Resource Water, or Ecologically Sensitive Waterbody, or Natural and Scenic Waterway for the Purpose of Constructing a Reservoir on a Free Flowing Waterbody to Provide a Domestic Water Supply.

- (A) An Extraordinary Resource Water, Ecologically Sensitive Waterbody, or Natural and Scenic Waterway designated use may be removed from a free flowing waterbody for the purpose of constructing a reservoir to provide a domestic water supply, if it can be demonstrated that:
 - (1) the sole purpose for the funding and construction of the reservoir is to provide a domestic water supply; and
 - (2) there is no feasible alternative to constructing a reservoir in order to meet the domestic water needs of the citizens of the State of Arkansas.

The limitation in Subsection A(1) of this section does not prohibit incidental uses of the reservoir

that are consistent with the use of domestic water supply.

(B) A petition to initiate rulemaking to remove an Extraordinary Resource Water, Ecologically Sensitive Waterbody, or Natural and Scenic Waterway designated use from a free flowing waterbody in order to construct a reservoir to provide a domestic water supply may be submitted to the Commission by a regional water distribution district, public facilities board, public water authority, or other public entity engaged in providing water to the public. Such petition, at a minimum, shall include:

- (1) A map depicting the location of the proposed project and the area to be impounded;
- (2) A description of the proposed project, including detailed design plans;
- (3) A certification that the proposed structure to impound the free flowing stream shall be funded and constructed solely for the purpose of providing a domestic water supply;
- (4) An evaluation of all alternatives to the proposed project, including:
 - (i) an environmental assessment of the impacts of each alternative on the instream and downstream water quality, the instream habitat, and the habitat and plant and animal life in the area upstream, downstream, and to be inundated by the proposed project;
 - (ii) the costs associated with, and an economic analysis for, each alternative;
 - (iii) an engineering analysis for each alternative; and
 - (iv) a socio-economic evaluation of the project to the local area and to the State as a whole; and
- (5) Information and supporting documentation which address the criteria set forth in Appendix E;
- (6) A recommendation to the Commission from the Director on whether or not the designated use should be maintained based upon a review of the information and supporting documentation required to be considered in Appendix E. The Director shall provide the petitioner with the Director's recommendation within 180 days of the Department's receipt of the petitioner's Appendix E submittal. If the Director does not deliver a recommendation to the petitioner within the 180 day time period, the petitioner may file its petition under this section without including a recommendation from the Director. The Director may submit a recommendation to the Commission at any time not less than 30 days prior to the Commission's final decision on the petition.
- (7) A description of any proposed mechanisms for protecting the domestic water supply, including but not limited to prohibitions to be placed on commercial and residential development along the proposed shoreline of the impoundment, the controls to be placed on public access to the water supply, and the legal authority for establishing and maintaining these domestic water supply protections; and
- (8) Any other submittals required by Regulation No. 8 for a petition to initiate rulemaking.

(C) The Commission, as part of its rulemaking decision, shall determine whether or not a feasible alternative to constructing a reservoir is available to meet the domestic water needs of the citizens of the State of Arkansas. The Commission shall set forth the reasons for its determination in writing. The designated use of Extraordinary Resource Water, Ecologically Sensitive Waterbody, or Natural and Scenic Waterway shall not be removed by the Commission if a feasible alternative to constructing a reservoir is available to meet the domestic water needs

of the citizens of the State of Arkansas.

(D) The Commission, as part of its rulemaking, shall determine whether or not the sole purpose for the funding and construction of the reservoir is to provide a domestic water supply. The Commission shall set forth the reasons for its determination in writing. The designated use of Extraordinary Resource Water, Ecologically Sensitive Waterbody, or Natural and Scenic Waterway shall not be removed by the Commission if the purpose for the funding and construction of the reservoir is other than to provide a domestic water supply. In no circumstance, shall the designated use of Extraordinary Resource Water, Ecologically Sensitive Waterbody, or Natural and Scenic Waterway be removed by the Commission from a free flowing waterbody in order to construct a reservoir for recreational, flood control, or economic purposes other than providing a domestic water supply.

(E) The Commission, as part of its rulemaking decision, shall determine whether or not the designated use of Extraordinary Resource Water, Ecologically Sensitive Waterbody, or Natural and Scenic Waterway of a given waterbody should be maintained. The Commission shall set forth the reasons for its determination in writing, after considering the Director's recommendation referenced in Subsection (B)(6) of this section and reviewing the information and supporting documentation which address the criteria set forth in Appendix E.

Reg. 2.311 Procedure for the Addition of the Designated Use of Extraordinary Resource Water, or Ecologically Sensitive Waterbody, or Natural and Scenic Waterway to a Waterbody or Segment of a Waterbody.

(A) Any waters of the State may be nominated for designation as an Extraordinary Resource Water, Ecologically Sensitive Waterbody, or Natural and Scenic Waterway by submitting a petition to initiate rulemaking to the Arkansas Pollution Control and Ecology Commission. Such petition shall include, at a minimum, the following:

- (1) Name of petitioner;
- (2) Petitioner's mailing address and telephone number;
- (3) Name and location description of the waterbody or segment proposed for designation;
- (4) A map depicting the waterbody or segment proposed for designation;
- (5) Petitioner's interest in the proposed action;
- (6) Statement of potential benefits and impacts of the proposed action, including economic benefits and impacts;
- (7) Evidence of requests for resolution(s) by appropriate local government(s) regarding the nomination of the waterbody as an Extraordinary Resource Water, Ecologically Sensitive Waterbody, or Natural and Scenic Waterway;
- (8) Supporting documentation for the designation, including information which addresses the factors listed in Appendix F;
- (9) Recommended language change necessary to affect this proposed change to any Commission regulation; and
- (10) Any other submittals required by Regulation No. 8 for a petition to initiate rulemaking.

(B) The Commission, as part of its rulemaking, shall set forth in writing the reasons for its final decision.

CHAPTER 4: GENERAL STANDARDS

Reg. 2.401 Applicability

Unless otherwise indicated in this Chapter or in Appendix A, the general standards outlined below are applicable to all surface waters of the State at all times. They apply specifically with regard to substances attributed to discharges, nonpoint sources or instream activities as opposed to natural phenomena. Waters may, on occasion, have natural background levels of certain substances outside the limits established by these criteria, in which case these criteria do not apply.

Reg. 2.402 Nuisance Species

All waters shall be free from substances attributed to man-caused point or nonpoint source discharges in concentrations that produce undesirable aquatic biota or result in the dominance of nuisance species.

Reg. 2.403 Methods

The methods of sample collection, preservation, measurements and analyses shall be in accordance with the United States Environmental Protection Agency *Guidelines Establishing Test Procedures for the Analysis of Pollutants* (40 C.F.R. Part 136) or other proven methods acceptable to the Department.

Reg. 2.404 Mixing Zones

Where mixing zones are allowed, the effects of wastes on the receiving stream shall be determined after the wastes have been thoroughly mixed with the mixing zone volume. Outfall structures should be designed to minimize the extent of mixing zones to ensure rapid and complete mixing.

For aquatic life toxic substances in larger streams (those with Q7-10 flows equal to or greater than 100 cfs), the zone of mixing shall not exceed 1/4 of the cross-sectional area and/or critical flow volume of the stream. The remaining 3/4 of the stream shall be maintained as a zone of passage for swimming and drifting organisms, and shall remain of such quality that stream ecosystems are not significantly affected. In the smaller streams (Q7-10 flows less than 100 cfs) because of varying local physical and chemical conditions and biological phenomena, a site-specific determination shall be made on the percentage of river width necessary to allow passage of critical free-swimming and drifting organisms so that negligible or no effects are produced on their populations. As a guideline, no more than 2/3 of the cross-sectional area and/or critical flow volume of smaller streams should be devoted to mixing zones thus leaving at least 1/3 of the cross-sectional area free as a zone of passage.

Mixing zones are not allowed for the parameters of bacteria or oil and grease, or where the background flow is less than the critical flow or where the background concentration of a waste parameter exceeds the specific criteria for that waste parameter.

In lakes and reservoirs the size of mixing zones shall be defined by the Department on an individual basis, and the area shall be kept at a minimum.

Mixing zones shall not prevent the free passage of fish or significantly affect aquatic ecosystems.

A mixing zone shall not include any domestic water supply intake.

Reg. 2.405 Biological Integrity

For all waters with specific aquatic life use designated in Appendix A, aquatic biota should not be impacted. Aquatic biota should be representative of streams that have the ability to support the designated fishery, taking into consideration the seasonal and natural variability of the aquatic biota community under naturally varying habitat and hydrological conditions; the technical and economic feasibility of the options available to address the relevant conditions; and other factors.

An aquatic biota assessment should compare biota communities that are similar in habitat and hydrologic condition, based upon either an in-stream study including an upstream and downstream comparison, a comparison to a reference water body within the same ecoregion, or a comparison to community characteristics from a composite of reference waters. Such a comparison should consider the seasonal and natural variability of the aquatic biota community. It is the responsibility of the Department to evaluate the data for an aquatic biota assessment to protect aquatic life uses designated in Appendix A. Such data may be used to develop permit effluent limitations or conditions.

Reg. 2.406 Color

True color shall not be increased in any waters to the extent that it will interfere with present or projected future uses of these waters.

Reg. 2.407 Taste and Odor

Taste and odor producing substances shall be limited in receiving waters to concentrations that will not interfere with the production of potable water by reasonable water treatment processes, or impart unpalatable flavor to food, fish or result in offensive odors arising from the waters or otherwise interfere with the reasonable use of the water.

Reg. 2.408 Solids, Floating Material and Deposits

Receiving waters shall have no distinctly visible solids, scum or foam of a persistent nature, nor shall there be any formation of slime, bottom deposits or sludge banks.

Reg. 2.409 Toxic Substances

Discharges shall not be allowed into any waterbody which, after consideration of the zone of initial dilution, the mixing zone and critical flow conditions, will cause toxicity to human, animal, plant or aquatic biota or interfere with normal propagation, growth, and survival of aquatic biota.

Reg. 2.410 Oil and Grease

Oil, grease or petrochemical substances shall not be present in receiving waters to the extent that they produce globules or other residue or any visible, colored film on the surface or coat the banks and/or bottoms of the waterbody or adversely affect any of the associated biota.

CHAPTER 5: SPECIFIC STANDARDS

Reg. 2.501 **Applicability**

Unless otherwise indicated in this Chapter or in Appendix A, the following specific standards shall apply to all surface waters of the state at all times except during periods when flows are less than the applicable critical flow. Streams with regulated flow will be addressed on a case-by-case basis to maintain designated instream uses. These standards apply outside the applicable mixing zone. Waters may, on occasion, have natural background levels of certain substances outside the limits established by these criteria, in which case these criteria do not apply to the naturally occurring excursions.

Reg. 2.502 **Temperature**

Heat shall not be added to any waterbody in excess of the amount that will elevate the natural temperature, outside the mixing zone, by more than 5° F (2.8° C) based upon the monthly average of the maximum daily temperatures measured at mid-depth or three feet (whichever is less) in streams, lakes or reservoirs. The following standards are applicable:

Waterbodies	Limit ° C (° F)
Streams	
Ozark Highlands	29 (84.2)
Boston Mountains	31 (87.8)
Arkansas River Valley	31 (87.8)
Ouachita Mountains	30 (86.0)
Springwater-influenced Gulf Coastal	30 (86.0)
Typical Gulf Coastal	30 (86.0)
Least-Altered Delta	30 (86.0)
Channel-Altered Delta	32 (89.6)
White River (Dam #1 to mouth)	32 (89.6)
St. Francis River	32 (89.6)
Mississippi River	32 (89.6)
Arkansas River	32 (89.6)
Ouachita River (L. Missouri R. to Louisiana state line)	32 (89.6)
Red River	32 (89.6)
Lakes and Reservoirs (applicable at 1.0 meter depth)	32 (89.6)
Trout waters	20 (68.0)

Temperature requirements shall not apply to off-stream privately-owned reservoirs constructed primarily for industrial cooling purposes and financed in whole or in part by the entity or successor entity using the lake for cooling purposes.

Reg. 2.503 Turbidity

There shall be no distinctly visible increase in turbidity of receiving waters attributable to discharges or instream activities. The values below should not be exceeded during base flow (June to October) in more than 20% of samples. The values below should not be exceeded during all flows in more than 25% of samples taken in not less than 24 monthly samples.

Waterbodies	Base Flows Values (NTU)	All Flows Values (NTU)
Streams		
Ozark Highlands	10	17
Boston Mountains	10	19
Arkansas River Valley	21	40
Ouachita Mountains	10	18
Springwater-influenced Gulf Coastal	21	32
Typical Gulf Coastal	21	32
Least-Altered Delta	45	84
Channel-Altered Delta	75	250
Arkansas River	50	52
Mississippi River	50	75
Red River	50	150
St. Francis River	75	100
Trout	10	15
Lakes and Reservoirs (applicable at 1.0 meter depth)	25	45

Reg. 2.504 pH

pH between 6.0 and 9.0 standard units are the applicable standards for streams. For lakes, the standards are applicable at 1.0 meter depth. As a result of waste discharges, the pH of water in streams or lakes must not fluctuate in excess of 1.0 standard unit over a period of 24 hours.

Reg. 2.505 Dissolved Oxygen

Rivers and Streams

The following dissolved oxygen standards are applicable:

Waterbodies	Criteria (mg/L)	
	Primary	Critical
Streams		
Ozark Highlands		
<10 mi ² watershed	6	2
10 to 100 mi ²	6	5
>100 mi ² watershed	6	6

Waterbodies	Criteria (mg/L)	
Boston Mountains		
<10 mi ² watershed	6	2
>10 mi ² watershed	6	6
Arkansas River Valley		
<10 mi ² watershed	5	2
10 mi ² to 150 mi ²	5	3
151 mi ² to 400 mi ²	5	4
>400 mi ² watershed	5	5
Ouachita Mountains		
<10 mi ² watershed	6	2
>10 mi ² watershed	6	6
Typical Gulf Coastal		
<10 mi ² watershed	5	2
10 mi ² to 500 mi ²	5	3
>500 mi ² watershed	5	5
Springwater-influenced Gulf Coastal		
All size watersheds	6	5
Delta (least-altered and channel altered)		
<10 mi ² watershed	5	2
10 mi ² to 100 mi ²	5	3
>100 mi ² watershed	5	5
Trout Waters		
All size watersheds	6	6

In streams with watersheds of less than 10 mi², it is assumed that insufficient water exists to support aquatic life during the critical season. During this time, a dissolved oxygen standard of 2 mg/L will apply to prevent nuisance conditions. However, field verification is required in areas suspected of having significant groundwater flows or enduring pools which may support unique aquatic biota. In such waters the critical season standard for the next size category of stream shall apply.

All streams with watersheds of less than 10 mi² are expected to support aquatic life during the primary season when stream flows, including discharges, equal or exceed 1 cubic foot per second (cfs). However, when site verification indicates that aquatic life exists at flows below 1 cfs, such aquatic biota will be protected by the primary standard (refer to the State of Arkansas Continuing Planning Process for field verification requirements).

Also, in these streams with watersheds of less than 10 mi², where waste discharges are 1 cfs or more, they are assumed to provide sufficient water to support aquatic life and, therefore, must meet the dissolved oxygen standards of the next size category of streams.

For purposes of determining effluent discharge limits, the following conditions shall apply:

- (A) The primary season dissolved oxygen standard is to be met at a water temperature of 22°C (71.5°F) and at the minimum stream flow for that season. At water temperatures of 10°C (50°F), the dissolved oxygen standard is 6.5 mg/L.
- (B) During March, April and May, when background stream flows are 15 cfs or higher, the dissolved oxygen standard is 6.5 mg/L in all areas except the Delta Ecoregion, where the primary season dissolved oxygen standard will remain at 5 mg/L.
- (C) The critical season dissolved oxygen standard is to be met at maximum allowable water temperatures and at Q7-10 flows. However, when water temperatures exceed 22°C (71.6°F), a 1 mg/L diurnal depression will be allowed below the applicable critical standard for no more than 8 hours during any 24-hour period.

Lakes and Reservoirs

Specific dissolved oxygen standards for lakes and reservoirs shall be 5 mg/L applicable at 1.0 meter depth. Effluent limits for oxygen-demanding discharges into impounded waters are promulgated in Arkansas Pollution Control and Ecology Commission Regulation No. 6, Regulations for State Administration of the National Pollutant Discharge Elimination System (NPDES). However, the Commission may, after full satisfaction of the intergovernmental coordination and public participation provisions of the State of Arkansas Continuing Planning Process, establish alternative limits for dissolved oxygen in lakes and reservoirs where studies and other relevant information can demonstrate that predominant ecosystem conditions may be more accurately reflected by such alternate limits; provided that these limits shall be compatible with all designated beneficial uses of named lakes and reservoirs.

Reg. 2.506 Radioactivity

The Rules and Regulations for the Control of Sources of Ionizing Radiation of the Division of Radiological Health, Arkansas Department of Health, limits the maximum permissible levels of radiation that may be present in effluents to surface waters in uncontrollable areas. These limits shall apply for the purposes of these standards, except that in no case shall the levels of dissolved radium-226 and strontium-90 exceed 3 and 10 picocuries/liter, respectively, in the receiving water after mixing, nor shall the gross beta concentration exceed 1000 picocuries/liter.

Reg. 2.507 Bacteria

For the purposes of this regulation, all streams with watersheds less than 10 mi² shall not be designated for primary contact unless and until site verification indicates that such use is attainable. No mixing zones are allowed for discharges of bacteria.

For assessment of ambient waters as impaired by bacteria, the below listed applicable values for *E. coli* shall not be exceeded in more than 25% of samples in no less than eight (8) samples taken during the primary contact season or during the secondary contact season.

The following standards are applicable:

<u>Contact Recreation Seasons</u>	<u>Limit (col/100mL)</u>			
	<u>E. coli</u>		<u>Fecal Coliform</u>	
<u>Primary Contact</u> ¹	<u>IS</u> ³	<u>GM</u> ⁴	<u>IS</u> ³	<u>GM</u> ⁴
ERW, ESW, NSW, Reservoirs, Lakes ²	298	126	400	200
All Other Waters	410	-	400	200
<u>Secondary Contact</u> ⁵				
ERW, ESW, NSW, Reservoirs, Lakes ²	1490	630	2000	1000
All Other Waters	2050	-	2000	1000

¹ May 1 to September 30

² Applicable at 1.0 meter depth in Reservoirs and Lakes

³ For assessment of Individual Sample Criteria– at least eight (8) data points

⁴ For calculation and assessment of Geometric Mean – calculated on a minimum of five (5) samples spaced evenly and within a thirty (30)-day period.

⁵ October 1 to April 30

The Arkansas Department of Health has the responsibility of approving or disapproving surface waters for public water supply and of approving or disapproving the suitability of specifically delineated outdoor bathing places for body contact recreation, and it has issued rules and regulations pertaining to such uses.

Reg. 2.508 Toxic Substances

Toxic substances shall not be present in receiving waters, after mixing, in such quantities as to be toxic to human, animal, plant or aquatic life or to interfere with the normal propagation, growth and survival of the indigenous aquatic biota. Acute toxicity standards apply outside the zone of initial dilution. Within the zone of initial dilution acute toxicity standards may be exceeded but acute toxicity may not occur. Chronic toxicity and chronic numeric toxicity standards apply at, or beyond, the edge of the mixing zone. Permitting of all toxic substances shall be in accordance with the toxic implementation strategy found in the State of Arkansas Continuing Planning Process. For non-permit issues and as a guideline for evaluating toxic substances not listed in the following tables, the Department may consider No Observed Effect Concentrations or other literature values as appropriate. For the substances listed below, the following standards shall apply:

ALL WATERBODIES - AQUATIC LIFE CRITERIA

<u>Substance</u>	<u>Acute Values (µg/L)</u>	<u>Chronic Values (µg/L) (24-hr Average)</u>
PCBs		0.0140
Aldrin	3.0	
Dieldrin	2.5	0.0019
DDT (& metabolites)	1.1	0.0010
Endrin*	0.18	0.0023
Toxaphene	0.73	0.0002
Chlordane	2.4	0.0043
Endosulfan*	0.22	0.056
Heptachlor	0.52	0.0038
Hexachlorocyclohexane*	2.0	0.080
Pentachlorophenol	$e^{[1.005(\text{pH})-4.869]}$	$e^{[1.005(\text{pH})-5.134]}$
Chlorpyrifos	0.083	0.041

* Total of all isomers

DISSOLVED METALS *

<u>Acute Criteria (CMC) - µg/L(ppb)</u>			<u>Chronic Criteria (CCC) - µg/L(ppb)</u>		
<u>Substance</u>	<u>Formula</u>	<u>X Conversion</u>	<u>Formula</u>	<u>X Conversion</u>	
Cadmium	$e^{[1.128(\text{Inhardness})]-3.828}$	(a)	$e^{[0.7852(\text{Inhardness})]-3.490}$		(c)
Chromium(III)	$e^{[0.819(\text{Inhardness})]+3.688}$	0.316	$e^{[0.8190(\text{Inhardness})]+1.561}$		0.860
Chromium (VI)	16	0.982	11		0.962
Copper	$e^{[0.9422(\text{Inhardness})]-1.464}$	0.960	$e^{[0.8545(\text{Inhardness})]-1.465}$		0.960
Lead	$e^{[1.273(\text{Inhardness})]-1.460}$	(b)	$e^{[1.273(\text{Inhardness})]-4.705}$		(b)
Mercury‡	2.4	0.85	0.012**		NONE
Nickel	$e^{[0.8460(\text{Inhardness})]+3.3612}$	0.998	$e^{[0.8460(\text{Inhardness})]+1.1645}$		0.997
Selenium**	20	NONE	5		NONE
Silver	$e^{[1.72(\text{Inhardness})]-6.52}$	0.85	-----		NONE
Zinc	$e^{[0.8473(\text{Inhardness})]+0.8604}$	0.978	$e^{[0.8473(\text{Inhardness})]+0.7614}$		0.986
Cyanide**	22.36	NONE	5.2		NONE

*These values may be adjusted by a site specific Water Effects Ratio (WER) as defined in 40 CFR Part 131.36 (c).

- (a) Calculated as: $1.136672 - [(\ln \text{hardness})(0.041838)]$
- (b) Calculated as: $1.46203 - [(\ln \text{hardness})(0.145712)]$
- (c) Calculated as: $1.101672 - [(\ln \text{hardness})(0.041838)]$

**Expressed as total recoverable.

‡Mercury based on bioaccumulation of residues in aquatic organisms.

ALL WATERBODIES - HUMAN HEALTH CRITERIA

<u>Substance</u>	<u>Criteria (ng/L)*</u>
Dioxin (2,3,7,8 TCDD)	0.001
Chlordane	5.0
PCBs (polychlorinated biphenyls)	0.4
alpha Hexachlorocyclohexane	37.3
Beryllium	4000**
Dieldrin	1.2
Toxaphene	6.3

* Criteria based on a lifetime risk factor of 10^{-5} .

** 4000 ng/L is also represented as 4.0 ug/L, which is the maximum contaminant level under the Safe Drinking Water Act, 42 U.S.C. § 300f *et seq.*

The permittee shall have the option to develop site-specific numerical standards for toxic substances using United States Environmental Protection Agency approved bioassay methodology and guidance. Such guidance may include but may not be limited to *Water Quality Standards Handbook; Guidelines for Deriving Numerical National Water Quality Criteria for the Protection of Aquatic Organisms and Their Uses* (August, 1994); *Methods for Measuring the Acute Toxicity of Effluents to Freshwater and Marine Organisms* (EPA 600/4-90/027F. 5th ed. December 2002); *Short Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms* (EPA/600/4-91/002. 4th ed. October 2002) or most recent update thereof.

Only ambient water quality data for dissolved metals generated or approved by the Department after March 1, 1993 will be considered in the documentation of background concentrations for the purpose of developing permit limitations.

Reg. 2.509 Nutrients

(A) Materials stimulating algal growth shall not be present in concentrations sufficient to cause objectionable algal densities or other nuisance aquatic vegetation or otherwise impair any designated use of the waterbody. Impairment of a waterbody from excess nutrients is dependent

on the natural waterbody characteristics such as stream flow, residence time, stream slope, substrate type, canopy, riparian vegetation, primary use of waterbody, season of the year and ecoregion water chemistry. Because nutrient water column concentrations do not always correlate directly with stream impairments, impairments will be assessed by a combination of factors such as water clarity, periphyton or phytoplankton production, dissolved oxygen values, dissolved oxygen saturation, diurnal dissolved oxygen fluctuations, pH values, aquatic-life community structure and possibly others. However, when excess nutrients result in an impairment, based upon Department assessment methodology, by any Arkansas established numeric water quality standard, the waterbody will be determined to be impaired by nutrients.

(B) Site Specific Nutrient Standards

Lake	Chlorophyll a (ug/L)**	Secchi Transparency (m)***
Beaver Lake*	8	1.1

*These standards are for measurement at the Hickory Creek site over the old thalweg, below the confluence of War Eagle Creek and the White River in Beaver Lake.

**Growing season geometric mean (May - October)

***Annual Average

All point source discharges into the watershed of waters officially listed on Arkansas' impaired waterbody list (303d) with phosphorus as the major cause shall have monthly average discharge permit limits no greater than those listed below. Additionally, waters in nutrient surplus watersheds as determined by Act 1061 of 2003 Regular Session of the Arkansas 84th General Assembly and subsequently designated nutrient surplus watersheds may be included under this Reg. if point source discharges are shown to provide a significant phosphorus contribution to waters within the listed nutrient surplus watersheds.

<u>Facility Design Flow – mgd</u>	<u>Total Phosphorus discharge limit – mg/L</u>
= or > 15	Case by case
3 to <15	1.0
1 to <3	2.0
0.5 to <1.0	5.0
<0.5	Case by Case

For discharges from point sources which are greater than 15 mgd, reduction of phosphorus below 1 mg/L may be required based on the magnitude of the phosphorus load (mass) and the type of downstream waterbodies (e.g., reservoirs, Extraordinary Resource Waters). Additionally, any discharge limits listed above may be further reduced if it is determined that these values are causing impairments to special waters such as domestic water supplies, lakes or reservoirs or Extraordinary Resource Waters.

Reg. 2.510 Oil and Grease

Oil, grease or petrochemical substances shall not be present in receiving waters to the extent that they produce globules or other residue or any visible, colored film on the surface, or coat the banks and/or bottoms of the watercourses or adversely affect any of the associated biota. Oil and

grease shall be an average of no more than 10 mg/L or a maximum of no more than 15 mg/L. No mixing zones are allowed for discharges of oil and grease.

Reg. 2.511 Mineral Quality

(A) Site Specific Mineral Quality Criteria

Mineral quality shall not be altered by municipal, industrial, other waste discharges or instream activities so as to interfere with designated uses. The following criteria apply to the streams indicated.

<u>Stream</u>	<u>Concentration-mg/L</u>		
	<u>Chlorides</u> (Cl ⁻)	<u>Sulfates</u> (SO ₄ ⁻)	<u>TDS</u>
Arkansas River Basin			
Arkansas River (Mouth to Murray Lock and Dam [L&D #7])	250	100	500
Bayou Meto (Rocky Branch to Bayou Two Prairie)	64*	ER	ER
Bayou Meto (mouth to Pulaski/Lonoke county line)	95**	45**	ER
Bayou Two Prairie (Pulaski/Lonoke county line to Northern boundary of Smoke Hole Natural Area)	95**	45**	ER
Bayou Two Prairie (Southern boundary of Smoke Hole Natural Area to Mouth)	95**	45**	ER
Rocky Branch Creek	64*	ER	ER
Little Fourche Creek (Willow Springs Branch to Fourche Creek)	ER	ER	179
Willow Springs Branch (McGeorge Creek to Little Fourche Creek)	ER	112	247
McGeorge Creek (headwaters to Willow Springs Branch)	ER	250	432
Arkansas River (Murray Lock and Dam [L&D #7] to Dardanelle Lock and Dam [L&D #10])	250	100	500
Cadron Creek	20	20	100
Arkansas River (Dardanelle Lock and Dam [L&D #10] to Oklahoma state line, including Dardanelle Reservoir)	250	120	500
James Fork	20	100	275
Illinois River	20	20	300
Poteau River from Scott County Road 59 to Oklahoma state line	120	60	500
Poteau River from confluence of Unnamed trib to Scott Count Road 59	185†	200†	786†
Unnamed trib from Tyson-Waldron Outfall 001 to confluence with the Poteau River	180†	200†	870†
White River Basin			
White River (Mouth to Dam #3)	20	60	430
Big Creek	20	30	270
Unnamed trib from Frit Ind.	ER	48*	ER
Cache River	20	30	270

<u>Stream</u>	<u>Concentration-mg/L</u>		
	<u>Chlorides</u> (Cl ⁻)	<u>Sulfates</u> (SO ₄ ⁼)	<u>TDS</u>
Bayou DeView (from Mouth to AR Hwy 14)	48	37.3	411.3
Bayou DeView (from AR Hwy 14 to Whistle Ditch)	48	38	411.3
Big Creek (from Whistle Ditch to mouth of Unnamed trib)	58	49	ER
Unnamed trib to Big Creek	71	60	453
Lost Creek Ditch	20	30	270
Little Red River (including Greers Ferry Reservoir)	20	30	100
Black River	20	30	270
Strawberry River	20	30	270
Spring River	20	30	290
Eleven Point River	20	30	270
Stennitt Creek from Brushy Creek to Spring River	ER	43.3†	456*
Brushy Creek from Unnamed Tributary to Stennitt Creek	ER	126†	549†
Unnamed Tributary from Vulcan Outfall 001 to Brushy Creek	ER	260†	725†
South Fork Spring River	20	30	270
Myatt Creek	20	30	270
Current River	20	30	270
White River (Dam #3 to Missouri state line, including Bull Shoals Reservoir)	20	20	180
Buffalo River	20	20	200
Crooked Creek (Harrison WWTP outfall to Monitoring Station WHI0193)	22.6†	24.4†	269†
Crooked Creek (Monitoring Station WHI0193 to the mouth)	20	20	238†
White River (Missouri state line, including Beaver Reservoir)	20	20	160
Holman Creek from the confluence with Town Branch downstream to the confluence with War Eagle Creek	180†	48†	621†
Town Branch from point of discharge of the City of Huntsville WWTP downstream to the confluence with Holman Creek	223†	61†	779†
White River from Noland WWTP to 0.4 miles downstream (WR-02)	44†	79†	362†
White River from WR-02 to WHI0052	30†	40†	237†
Kings River	20	20	150
West Fork White River	20	20	150
St. Francis River Basin			
St. Francis River (Mouth to 36° N. Lat.)	10	30	330
L'Anguille River	20	30	235

<u>Stream</u>	<u>Concentration-mg/L</u>		
	<u>Chlorides</u> (Cl ⁻)	<u>Sulfates</u> (SO ₄ ⁼)	<u>TDS</u>
Tyronza River (headwaters to Ditch No. 6 confluence)	20	30	350
Ditch No. 27	ER	480	1200
Ditch No. 6 (mouth to Ditch No. 27 confluence)	ER	210	630
Tyronza River (mouth to Ditch No. 6 confluence)	20	60	350
Little River	20	30	365
Pemiscot Bayou	20	30	380
St. Francis River (36° N. Lat. to 36° 30' N. Lat.)	10	20	180
Ouachita River Basin			
Bayou Bartholomew	30	30	220
Chemin-A-Haut Creek	50	20	500
Overflow Creek	20	30	170
Bayou Macon	30	40	330
Boeuf River	90	30	460
Big Cornie Creek	230	30	500
Little Cornie Creek	200	10	400
Three Creeks	250	10	500
Little Cornie Bayou	200	20	500
Walker Branch	180	ER	970
Gum Creek	104*	ER	311*
Bayou de L'Outre above Gum Creek	250	90	500
Bayou de L'Outre below Gum Creek	250	90	750
Ouachita River (Louisiana state line to Camden)	160	40	350
Saline River	20	40	120
Saline River east bifurcation at Holly Creek	ER	250	500
Hurricane Creek above Hurricane Lake Dam	20	250	500
Hurricane Creek from Hurricane Lk. Dam to Ben Ball Bridge	125	730	1210
Hurricane Creek from Ben Ball Bridge to US Hwy.270	125	700	1200
Hurricane Creek from Hwy 270 to Saline River	100	500	1000
Alcoa unnamed tribs to Hurricane Creek	125	700	1100
Dry Lost Creek and tribs	ER	560	880
Lost Creek to Little Lost Creek	ER	510	820
Lost Creek below Little Lost Creek	ER	300	550
Holly Creek	30	860	1600
Moro Creek	30	20	260
Smackover Creek	250	30	500
Unnamed trib A to Flat Creek from mouth of EDCC 001 ditch to confluence with Flat Creek	16*†	80*†	315*†
Confluence with unnamed trib A to Flat Creek	23*†	125*†	475*†
Boggy Creek - from the discharge for Clean Harbors El Dorado LLC to the confluence of Bayou de Loutre	631	63	1360
Ouachita River (Camden to Carpenter Dam)	50	40	150

<u>Stream</u>	<u>Concentration-mg/L</u>		
	<u>Chlorides</u> (Cl ⁻)	<u>Sulfates</u> (SO ₄ ⁼)	<u>TDS</u>
Town Creek below Acme tributary	ER	200	700
Unnamed trib from Acme	ER	330	830
Little Missouri River	10	90	180
Muddy Fork Little Missouri	ER	250	500
Bluff Creek and unnamed trib.	ER	651*	1033*
Garland Creek	250	250	500
South Fork Caddo	ER	60	128
Back Valley Creek	ER	250	500
Wilson Creek from its mouth upstream approx. 1.7 miles at the UMETCO property line	56	250	500
Ouachita River (Carpenter Dam to Headwaters, including Lake Ouachita tributaries)	10	10	100
Red River Basin			
Bayou Dorcheat	100	16*	250
Albemarle unnamed trib (AUT) to Horsehead Creek	137*	ER	383*
Horsehead Creek from AUT to mouth	85*	ER	260*
Cypress Creek	250	70	500
Crooked Creek	250	10	500
Dismukes Creek	26*	ER	157*
Big Creek from Dismukes to Bayou Dorcheat	20*	ER	200*
Bois d'Arc Creek from Caney Creek to Red River	113*	283*	420*
Caney Creek	113*	283*	420*
Bodcau Creek	250	70	500
Poston Bayou	120	40	500
Kelley Bayou	90	40	500
Red River from Arkansas/Oklahoma state line to mouth of the Little River	250	250†	940†
Red River from mouth of the Little River to the Arkansas/Louisiana State Line	250	225†	780†
Sulphur River	120	100	500
Days Creek	250	250	500
McKinney Bayou	180	60	480
Little River	20	20	100
Little River from Millwood Lake to the Red River	20	20	138†
Saline River	20	10	90
Mine Creek from Hwy 27 to Millwood Lake	90	65	700
Cossatot River	10	15	70
Upper Rolling Fork	20	20	100
Rolling Fork from unnamed trib A to DeQueen Lake	130	70	670
Unnamed tribs A and A1 at Grannis	135	70	700
Mountain Fork	20	20	110
Mississippi River (Louisiana state line to Arkansas River)	60	150	425

Stream

<u>Concentration-mg/L</u>		
<u>Chlorides</u>	<u>Sulfates</u>	<u>TDS</u>
(Cl ⁻)	(SO ₄ ⁼²)	
60	175	450

Mississippi River (Arkansas River to Missouri state line)

ER - ecoregion value

* - developed using background flow of 4 cfs

** - These limits shall apply to all tributaries of Bayou Meto and Bayou Two Prairie listed in Appendix A

Any modification of these values must be made in accordance with Reg. 2.306.

† Not applicable for Clean Water Act purposes until approved by EPA.

(B) Ecoregion Reference Stream Minerals Values

The following values were determined from Arkansas' least-disturbed ecoregion reference streams are considered to be the maximum naturally occurring levels. For waterbodies not listed above, any discharge which results in instream concentrations more than 1/3 higher than these values for chlorides (Cl⁻) and sulfates (SO₄⁼²) or more than 15 mg/L, whichever is greater, is considered to be a significant modification of the maximum naturally occurring values. These waterbodies should be considered as candidates for site specific criteria development in accordance with Regs. 2.306 and 2.308. Similarly, site specific criteria development should be considered if the following TDS values are exceeded after being increased by the sum of the increases to Cl and SO₄. Such criteria may be developed only in accordance with Regs. 2.306 and 2.308. The values listed in the table below are not intended nor will these values be used by the Department to evaluate attainment of the water quality standards.

ECOREGION REFERENCE STREAM VALUES (mg/L)

Ecoregion	Chlorides (Cl ⁻)	Sulfates (SO ₄ ²⁻)	TDS
Ozark Highlands	13	17	240
Boston Mountains	13	9	85
Arkansas River Valley	10	13	103
Ouachita Mountains	6	15	128
Gulf Coastal Plains	14	31	123
Delta	36	28	390

(C) Domestic Water Supply Criteria

In no case shall discharges cause concentrations in any waterbody to exceed 250, 250 and 500 mg/L of chlorides, sulfates and total dissolved solids, respectively, or cause concentrations to exceed the applicable criteria, except in accordance with Regs. 2.306 and 2.308. For lakes and reservoirs applicable at 1.0 meter depth.

Reg. 2.512 Ammonia

The total ammonia nitrogen (N) criteria and the frequency of occurrence are as follows:

(A) The one-hour average concentration of total ammonia nitrogen shall not exceed, more than once every three years on the average, the acute criterion as shown in the following table:

pH-Dependent Values of the CMC (Acute Criterion)- mg/L

<u>pH</u>	<u>Salmonids*</u> <u>Present</u>	<u>Salmonids</u> <u>Absent</u>
6.5	32.6	48.8
6.6	31.3	46.8
6.7	29.8	44.6
6.8	28.1	42.0
6.9	26.2	39.1
7.0	24.1	36.1
7.1	22.0	32.8
7.2	19.7	29.5
7.3	17.5	26.2
7.4	15.4	23.0
7.5	13.3	19.9
7.6	11.4	17.0
7.7	9.65	14.4
7.8	8.11	12.1
7.9	6.77	10.1
8.0	5.62	8.40
8.1	4.64	6.95
8.2	3.83	5.72
8.3	3.15	4.71
8.4	2.59	3.88
8.5	2.14	3.20
8.6	1.77	2.65
8.7	1.47	2.20
8.8	1.23	1.84
8.9	1.04	1.56
9.0	0.885	1.32

* Family of fishes which includes trout

(B) The monthly average concentration of total ammonia nitrogen shall not exceed those values shown as the chronic criterion in the following tables:

**Temperature and pH-Dependent Values of the CCC (Chronic Criterion)
for Fish Early Life Stages Present – mg/L**

<u>pH</u>	<u>Temperature °C</u>									
	<u>0</u>	<u>14</u>	<u>16</u>	<u>18</u>	<u>20</u>	<u>22</u>	<u>24</u>	<u>26</u>	<u>28</u>	<u>30</u>
6.5	6.67	6.67	6.06	5.33	4.68	4.12	3.62	3.18	2.80	2.46
6.6	6.57	6.57	5.97	5.25	4.61	4.05	3.56	3.13	2.75	2.42
6.7	6.44	6.44	5.86	5.15	4.52	3.98	3.50	3.07	2.70	2.37
6.8	6.29	6.29	5.72	5.03	4.42	3.89	3.42	3.00	2.64	2.32
6.9	6.12	6.12	5.56	4.89	4.30	3.78	3.32	2.92	2.57	2.25
7.0	5.91	5.91	5.37	4.72	4.15	3.65	3.21	2.82	2.48	2.18
7.1	5.67	5.67	5.15	4.53	3.98	3.50	3.08	2.70	2.38	2.09
7.2	5.39	5.39	4.90	4.31	3.78	3.33	2.92	2.57	2.26	1.99
7.3	5.08	5.08	4.61	4.06	3.57	3.13	2.76	2.42	2.13	1.87
7.4	4.73	4.73	4.30	3.78	3.32	2.92	2.57	2.26	1.98	1.74
7.5	4.36	4.36	3.97	3.49	3.06	2.69	2.37	2.08	1.83	1.61
7.6	3.98	3.98	3.61	3.18	2.79	2.45	2.16	1.90	1.67	1.47
7.7	3.58	3.58	3.25	2.86	2.51	2.21	1.94	1.71	1.50	1.32
7.8	3.18	3.18	2.89	2.54	2.23	1.96	1.73	1.52	1.33	1.17
7.9	2.80	2.80	2.54	2.24	1.96	1.73	1.52	1.33	1.17	1.03
8.0	2.43	2.43	2.21	1.94	1.71	1.50	1.32	1.16	1.02	0.897
8.1	2.10	2.10	1.91	1.68	1.47	1.29	1.14	1.00	0.879	0.773
8.2	1.79	1.79	1.63	1.43	1.26	1.11	0.973	0.855	0.752	0.661
8.3	1.52	1.52	1.39	1.22	1.07	0.941	0.827	0.727	0.639	0.562
8.4	1.29	1.29	1.17	1.03	0.906	0.796	0.700	0.615	0.541	0.475
8.5	1.09	1.09	0.990	0.870	0.765	0.672	0.591	0.520	0.457	0.401
8.6	0.920	0.920	0.836	0.735	0.646	0.568	0.499	0.439	0.386	0.339
8.7	0.778	0.778	0.707	0.622	0.547	0.480	0.422	0.371	0.326	0.287
8.8	0.661	0.661	0.601	0.528	0.464	0.408	0.359	0.315	0.277	0.244
8.9	0.565	0.565	0.513	0.451	0.397	0.349	0.306	0.269	0.237	0.208
9.0	0.486	0.486	0.442	0.389	0.342	0.300	0.264	0.232	0.204	0.179

Temperature and pH-Dependent Values of the CCC (Chronic Criterion)

for Fish Early Life Stages Absent – mg/L

<u>pH</u>	<u>Temperature °C</u>									
	<u>0-7</u>	<u>8</u>	<u>9</u>	<u>10</u>	<u>11</u>	<u>12</u>	<u>13</u>	<u>14</u>	<u>15*</u>	<u>16*</u>
6.5	10.8	10.1	9.51	8.92	8.36	7.84	7.35	6.89	6.46	6.06
6.6	10.7	9.99	9.37	8.79	8.24	7.72	7.24	6.79	6.36	5.97
6.7	10.5	9.81	9.20	8.62	8.08	7.58	7.11	6.66	6.25	5.86
6.8	10.2	9.58	8.98	8.42	7.90	7.40	6.94	6.51	6.10	5.72
6.9	9.93	9.31	8.73	8.19	7.68	7.20	6.75	6.33	5.93	5.56
7.0	9.60	9.00	8.43	7.91	7.41	6.95	6.52	6.11	5.73	5.37
7.1	9.20	8.63	8.09	7.58	7.11	6.67	6.25	5.86	5.49	5.15
7.2	8.75	8.20	7.69	7.21	6.76	6.34	5.94	5.57	5.22	4.90
7.3	8.24	7.73	7.25	6.79	6.37	5.97	5.60	5.25	4.92	4.61
7.4	7.69	7.21	6.76	6.33	5.94	5.57	5.22	4.89	4.59	4.30
7.5	7.09	6.64	6.23	5.84	5.48	5.13	4.81	4.51	4.23	3.97
7.6	6.46	6.05	5.67	5.32	4.99	4.68	4.38	4.11	3.85	3.61
7.7	5.81	5.45	5.11	4.79	4.49	4.21	3.95	3.70	3.47	3.25
7.8	5.17	4.84	4.54	4.26	3.99	3.74	3.51	3.29	3.09	2.89
7.9	4.54	4.26	3.99	3.74	3.51	3.29	3.09	2.89	2.71	2.54
8.0	3.95	3.70	3.47	3.26	3.05	2.86	2.68	2.52	2.36	2.21
8.1	3.41	3.19	2.99	2.81	2.63	2.47	2.31	2.17	2.03	1.91
8.2	2.91	2.73	2.56	2.40	2.25	2.11	1.98	1.85	1.74	1.63
8.3	2.47	2.32	2.18	2.04	1.91	1.79	1.68	1.58	1.48	1.39
8.4	2.09	1.96	1.84	1.73	1.62	1.52	1.42	1.33	1.25	1.17
8.5	1.77	1.66	1.55	1.46	1.37	1.28	1.20	1.13	1.06	0.990
8.6	1.49	1.40	1.31	1.23	1.15	1.08	1.01	0.951	0.892	0.836
8.7	1.26	1.18	1.11	1.04	0.976	0.915	0.858	0.805	0.754	0.707
8.8	1.07	1.01	0.944	0.885	0.829	0.778	0.729	0.684	0.641	0.601
8.9	0.917	0.860	0.806	0.756	0.709	0.664	0.623	0.584	0.548	0.513
9.0	0.790	0.740	0.694	0.651	0.610	0.572	0.536	0.503	0.471	0.442

* At 15° C and above, the criterion for fish Early Life Stage absent is the same as the criterion for fish-Early Life Stage present.

(C) The highest four-day average within a 30-day period should not exceed 2.5 times the chronic values shown above.

(D) For permitted discharges, the daily maximum or seven-day average permit limit shall be calculated using the four-day average value described above as an instream value, after mixing and based on a season when fish early life stages are present and a season when fish early life stages are absent. Temperature values used will be 14° C when fish early life stages are absent and the ecoregion temperature standard for the season when fish early life stages are present. The pH values will be the ecoregion mean value from least-disturbed stream data.

CHAPTER 6: EFFECTIVE DATE

This regulation is effective ten (10) days after filing with the Secretary of State, The State Library, and the Bureau of Legislative Research.

ARKANSAS POLLUTION CONTROL AND ECOLOGY COMMISSION

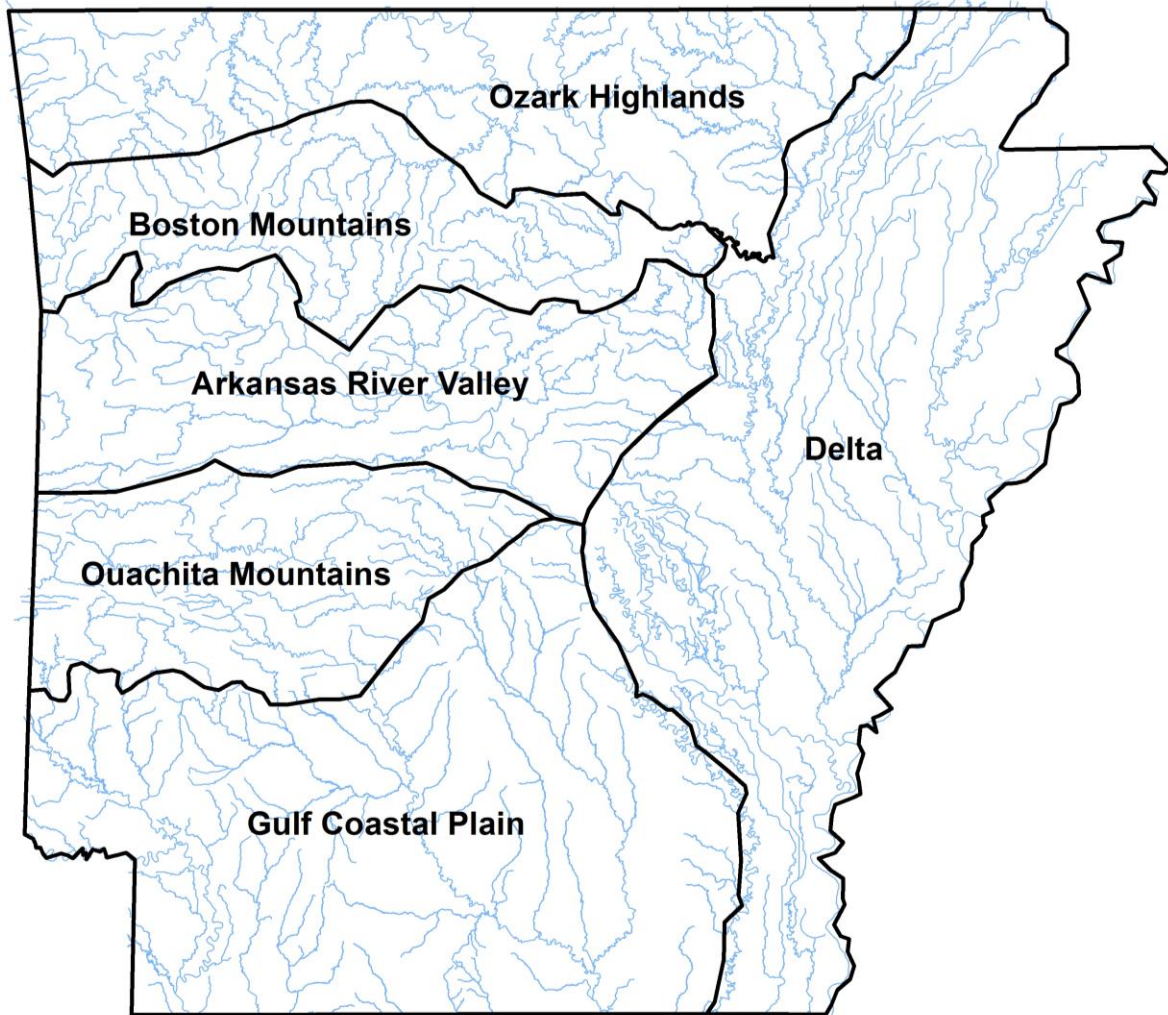


REGULATION NO. 2

APPENDIX A

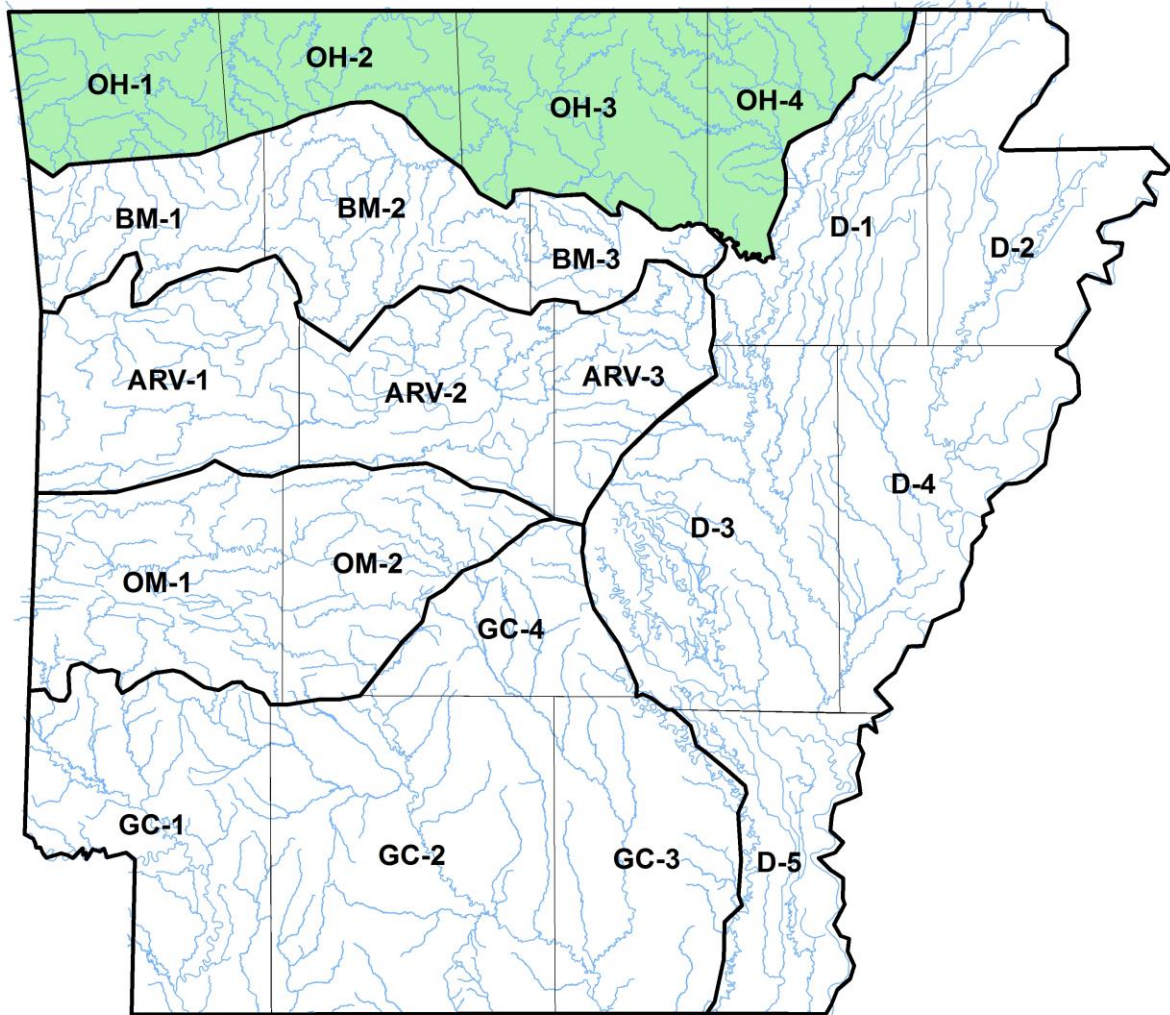
**Designated Uses, Specific Standards and Maps of Waters of
the State by Ecoregions**

APPENDIX A: MAP OF ECOREGIONS OF ARKANSAS



Ozark Highlands	A-3	Ouachita Mountains	A-36
Boston Mountains	A-16	Gulf Coastal	A-45
Arkansas River Valley	A-26	Delta	A-61

Index to Plates of the Ozark Highlands



DESIGNATED USES: OZARK HIGHLANDS ECOREGION
(Plates OH-1, OH-2, OH-3, OH-4)

Extraordinary Resource Waters

Current River (OH-4)
Eleven Point River (OH-4)
Strawberry River (OH-3, OH-4)
Little Strawberry River (OH-3)
Spring River, including its tributaries: Field Creek, Big Creek, English Creek, Gut Creek and Myatt Creek (OH-4)
South Fork Spring River (OH-3, OH-4)
North Sylamore Creek (OH-3)
Buffalo River (OH-2, OH-3)
Kings River (OH-2)
Bull Shoals Reservoir (OH-2, OH-3)

Natural and Scenic Waterways

Strawberry River from headwaters to Sharp-Izard County Line (OH-3, OH-4)
Kings River - that segment in Madison County (OH-2)
Buffalo River (OH-2, OH-3)
North Sylamore Creek (OH-3)*

Ecologically Sensitive Waterbodies

Cave Springs Cave, Logan Cave and numerous springs and spring-fed tributaries which support southern cavefish, Ozark cavefish, Arkansas darter, least darter, Oklahoma salamander, cave snails, cave crawfish and unique invertebrates (OH-1, OH-2, OH-3)
Strawberry River - location of Strawberry River darter (OH-3, OH-4)
Little Strawberry River – location of the Strawberry River darter (OH-3)
Spring River – snuffbox and pink mucket mussels; Ozark hellbender (OH-4)
Rock Creek – snuffbox and pink mucket mussels; Ozark hellbender (OH-4)
Eleven Point River - location of Ozark hellbender (OH-4)
Current River - location of flat floater and pink mucket mussels (OH-4)
Illinois River - Neosho mucket (OH-1)

Primary Contact Recreation - all streams with watersheds of greater than 10 mi² and all lakes/reservoirs**

Secondary Contact Recreation - all waters**

Domestic, Industrial and Agricultural Water Supply - all waters**

Aquatic Life**

Trout

Bull Shoals Reservoir - lower portion (OH-2)
White River from Bull Shoals Dam to Dam #3 (OH-3)
North Fork White River (OH-3)
Spring River from Mammoth Springs to South Fork Spring River (OH-4)
Upper White River from Beaver Dam to Missouri state line (OH-1)

Lakes and Reservoirs - all

Streams

Seasonal Ozark Highlands aquatic life use - all streams with watersheds of less than 10 mi² except as otherwise provided in Reg. 2.505

Perennial Ozark Highlands aquatic life use - all streams with watersheds of 10 mi² and larger and those waters where discharges equal or exceed 1-cfs

*As designated in the National Wild and Scenic Rivers System

**Except for those waters with designated use variations supported by Use Attainability Analysis or other investigations.

Site Specific Designated Use Variations Supported by Use Attainability Analysis or Other Investigations

- Railroad Hollow Creek - no fishable/swimmable uses (OH-1, #1)
- Columbia Hollow Creek - seasonal aquatic life use March-June (OH-1, #2)
- Curia Creek - below first waterfall, perennial aquatic life use (OH-4, #3)
- Moccasin Creek – below Arkansas Highway 177, perennial aquatic life use (OH-3, #4)
- Stennitt Creek- from Brushy Creek to Spring River, no domestic water supply use (OH-4, #6)
- Brushy Creek – from Unnamed Tributary to Stennitt Creek, no domestic water supply use (OH-4, #11) †
- Unnamed Tributary – from Vulcan Outfall 001 to Brushy Creek, no domestic water supply use (OH-4, #12) †
- Town Branch - from point of discharge of the City of Huntsville WWTP downstream to the confluence with Holman Creek, no domestic water supply use (OH-1, #9) †
- Holman Creek – from the confluence with Town Branch downstream to the confluence with War Eagle Creek, no domestic water supply use (OH-1, #10) †

SPECIFIC STANDARDS: OZARK HIGHLANDS ECOREGION
(Plates OH-1, OH-2, OH-3, OH-4)

	<u>Streams</u>	<u>Lakes and Reservoirs</u>
Temperature °C (°F)*	29 (84.2)	32 (89.6)
Trout waters	20 (68)	
Turbidity (NTU) (base/all)	10/17	25/45
Minerals	see Reg. 2.511	see Reg. 2.511
Dissolved Oxygen**	<u>Pri.</u> <u>Crit</u>	see Reg. 2.505
<10 mi ² watershed	6 2	
10 to 100 mi ²	6 5	
>100 mi ² watershed	6 6	
Trout waters	6 6	

All other standards (same as statewide)

Site Specific Standards Variations Supported by Use Attainability Analysis

- Railroad Hollow Creek: from headwaters to Spavinaw Creek - year-round dissolved oxygen - 2 mg/L (OH-1, #1)
- Curia Creek - below first waterfall, critical season dissolved oxygen 6 mg/L (OH-4, #3)
- Moccasin Creek - below Highway 177, critical season D.O. 5mg/L (OH-3, #4)

SWEPCO Reservoir - maximum temperature 54°C (limitation of 2.8°C above natural temperature does not apply)
(OH-1, #5)

Stennitt Creek - from Brushy Creek to Spring River, total dissolved solids = 456 mg/L, sulfate = 43.3 mg/L (OH-4, #6) †

Brushy Creek – from Unnamed Tributary to Stennitt Creek, sulfate = 126 mg/L, total dissolved solids = 549 mg/L (OH-4, #11) †

Unnamed Tributary – from Vulcan Outfall 001 to Brushy Creek, sulfate = 260 mg/L, total dissolved solids = 725 mg/L (OH-4, #12) †

Crooked Creek – from Harrison WWTP outfall to ADEQ Monitoring Station WHI0193; chloride 22.6 mg/L, sulfate 24.4 mg/L; TDS 269 mg/L (OH-2, #7) †

Crooked Creek – from ADEQ Monitoring Station WHI0193 to mouth: TDS 238 mg/L (OH-3, #8) †

White River – from Noland WWTP to 0.4 miles downstream (WR-02), chloride = 44 mg/L, sulfate = 79 mg/L, TDS = 362 mg/L (OH-1, #7) †

White River – from WR-02 to WHI0052, chloride = 30 mg/L, sulfate = 40 mg/L, TDS = 237 mg/L (OH-1, #8) †

Holman Creek - from the confluence with Town Branch downstream to the confluence with War Eagle Creek: chloride = 180 mg/L, sulfate = 48 mg/L, TDS = 621 mg/L (OH-1 #10) †

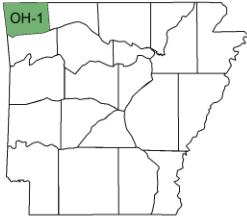
Town Branch - from point of discharge of the City of Huntsville WWTP downstream to the confluence with Holman Creek: chloride = 223 mg/L, sulfate = 61 mg/L, TDS = 779 mg/L (OH-1, #9) †

† Not applicable for clean water act purposes until approved by EPA.

*Increase over natural temperatures may not be more than 2.8°C (5°F).

**At water temperatures $\leq 10^{\circ}\text{C}$ or during March, April and May when stream flows are 15 cfs and greater, the primary season dissolved oxygen standard will be 6.5 mg/L. When water temperatures exceed 22°C, the critical season dissolved oxygen standard may be depressed by 1 mg/L for no more than 8 hours during a 24-hour period.

Plate OH-1 (Ozark Highlands)



LEGEND

- - Extraordinary Resource Waters
- Natural and Scenic Waterways
- Variation by UAA
- Ecologically Sensitive Waterbodies
- ESW Caves, Springs, and Seeps
- Trout_Waters

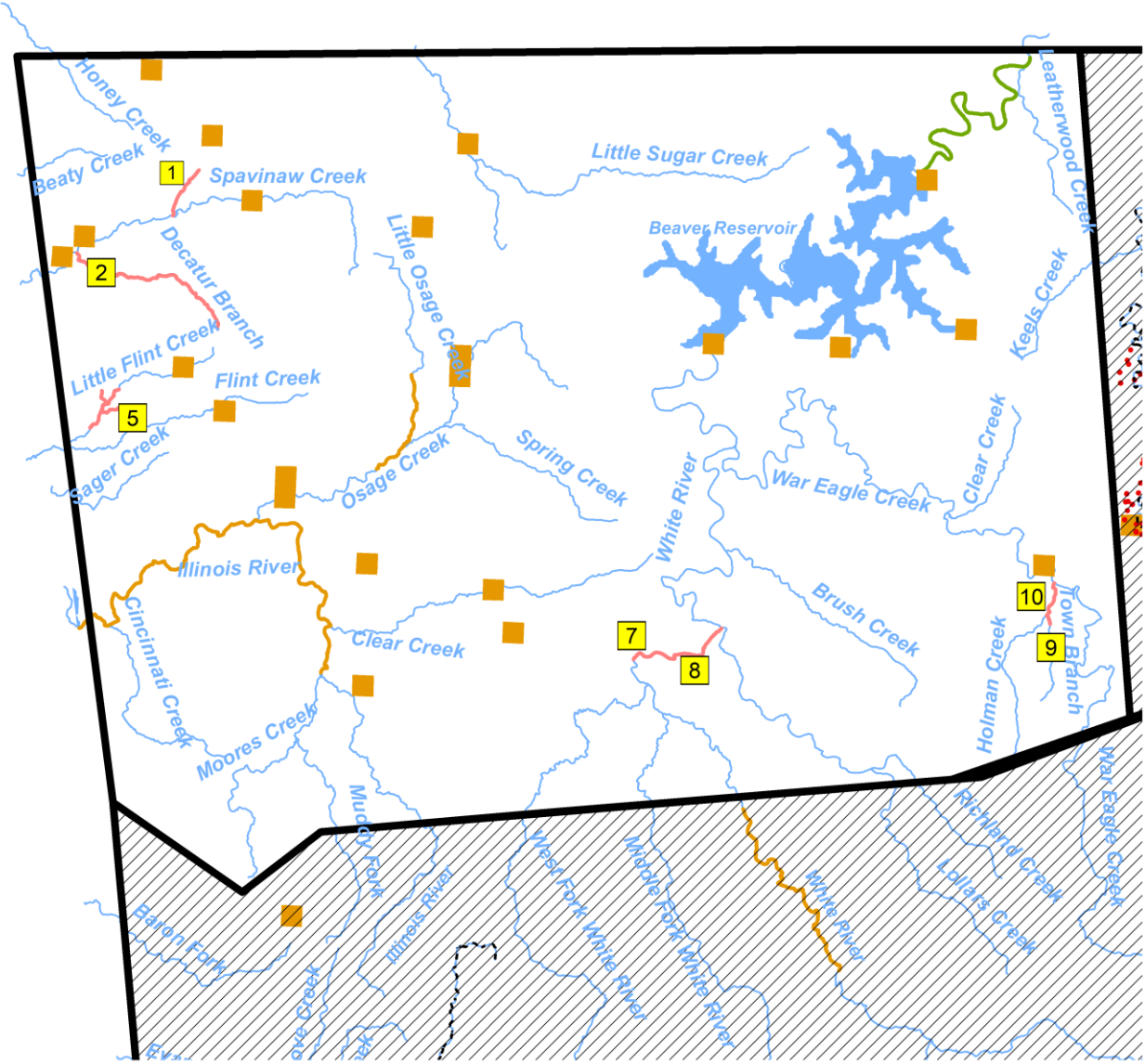


Plate OH-2 (Ozark Highlands)



LEGEND

- - Extraordinary Resource Waters
- Natural and Scenic Waterways
- Variation by UAA
- Ecologically Sensitive Waterbodies
- ESW Caves, Springs, and Seeps
- Trout Waters

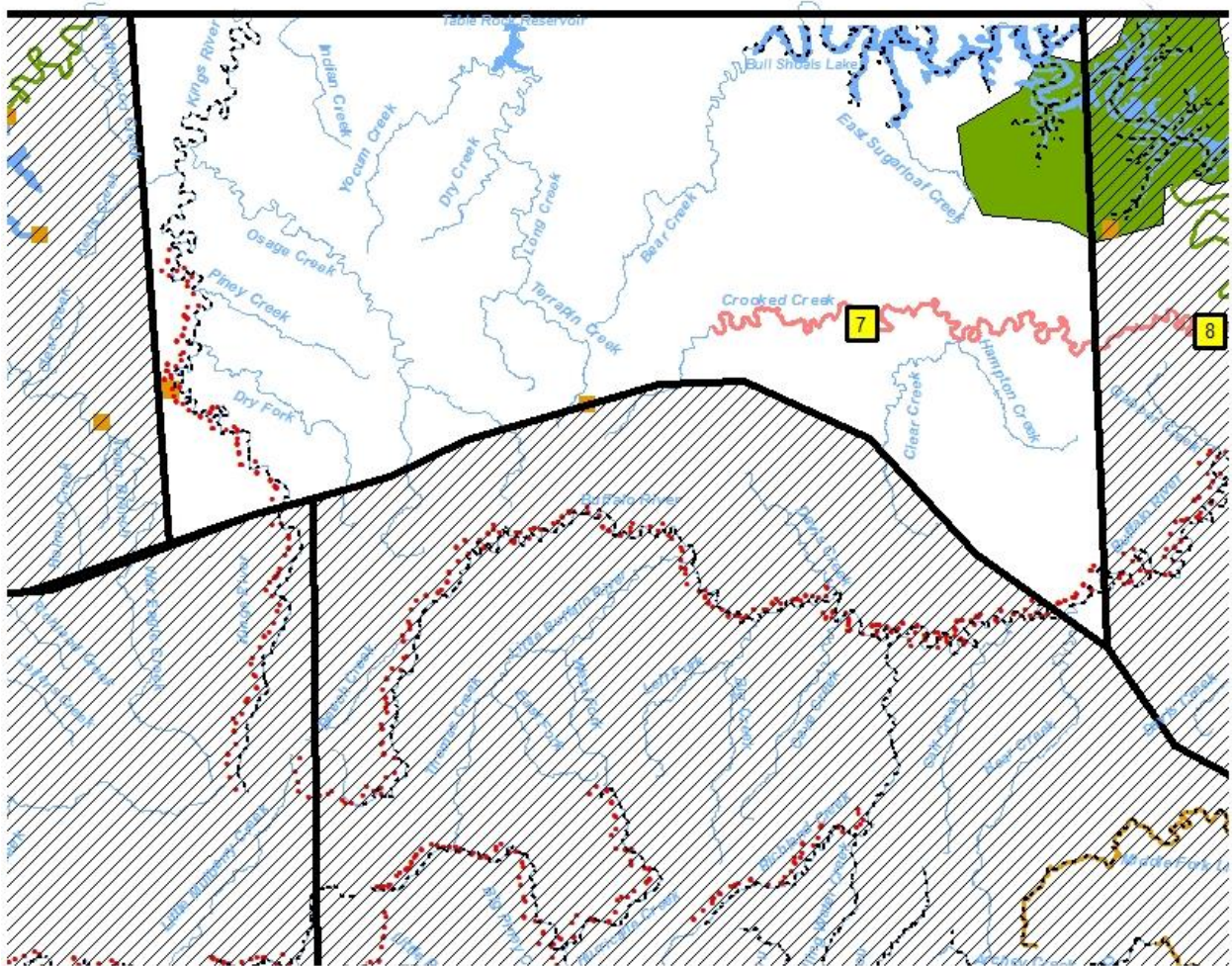


Plate OH-3 (Ozark Highlands)



LEGEND

- - Extraordinary Resource Waters
- Natural and Scenic Waterways
- Variation by UAA
- Ecologically Sensitive Waterbodies
- ESW Caves, Springs, and Seeps
- Trout Waters

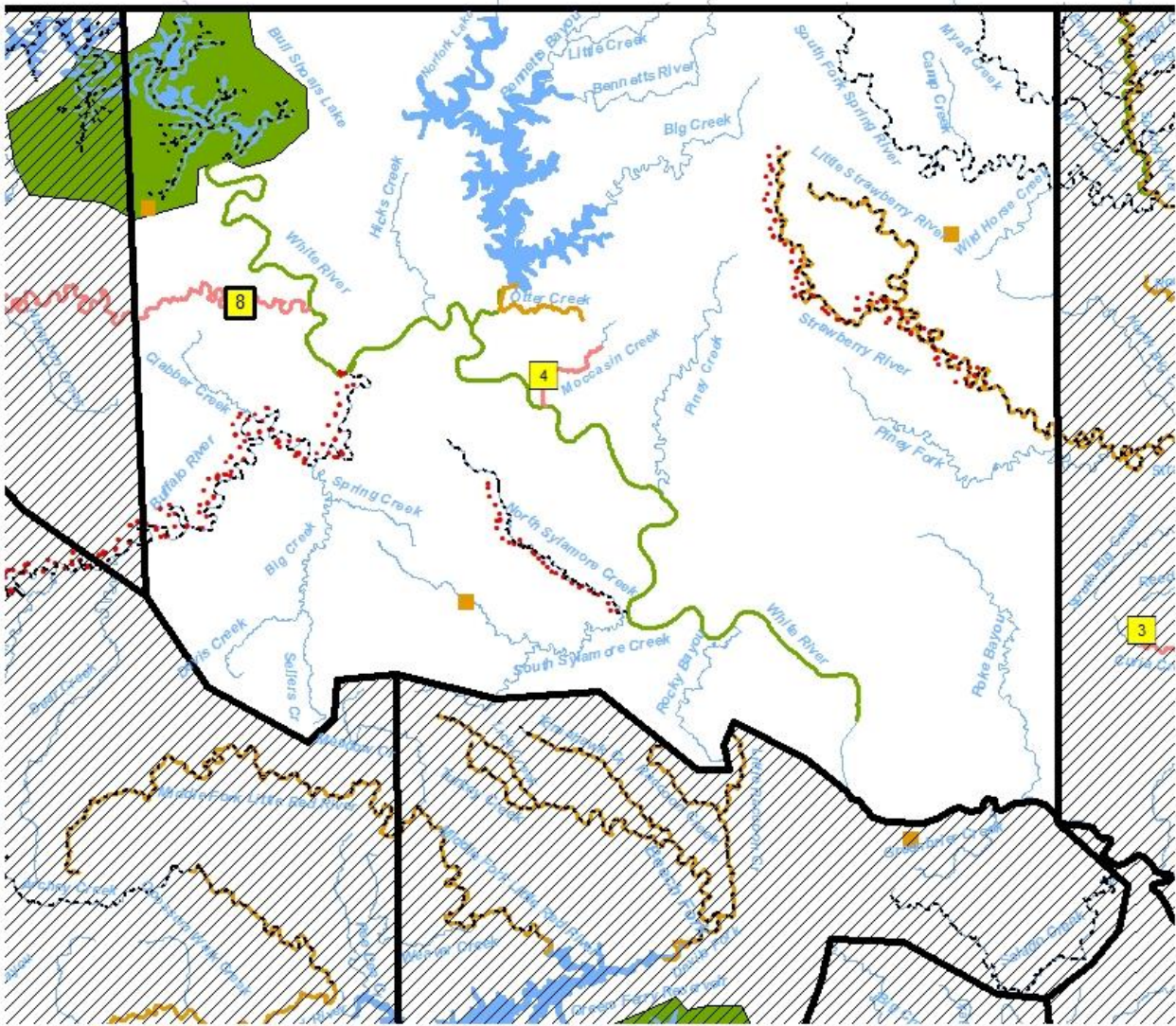
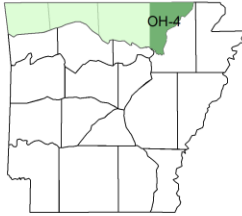
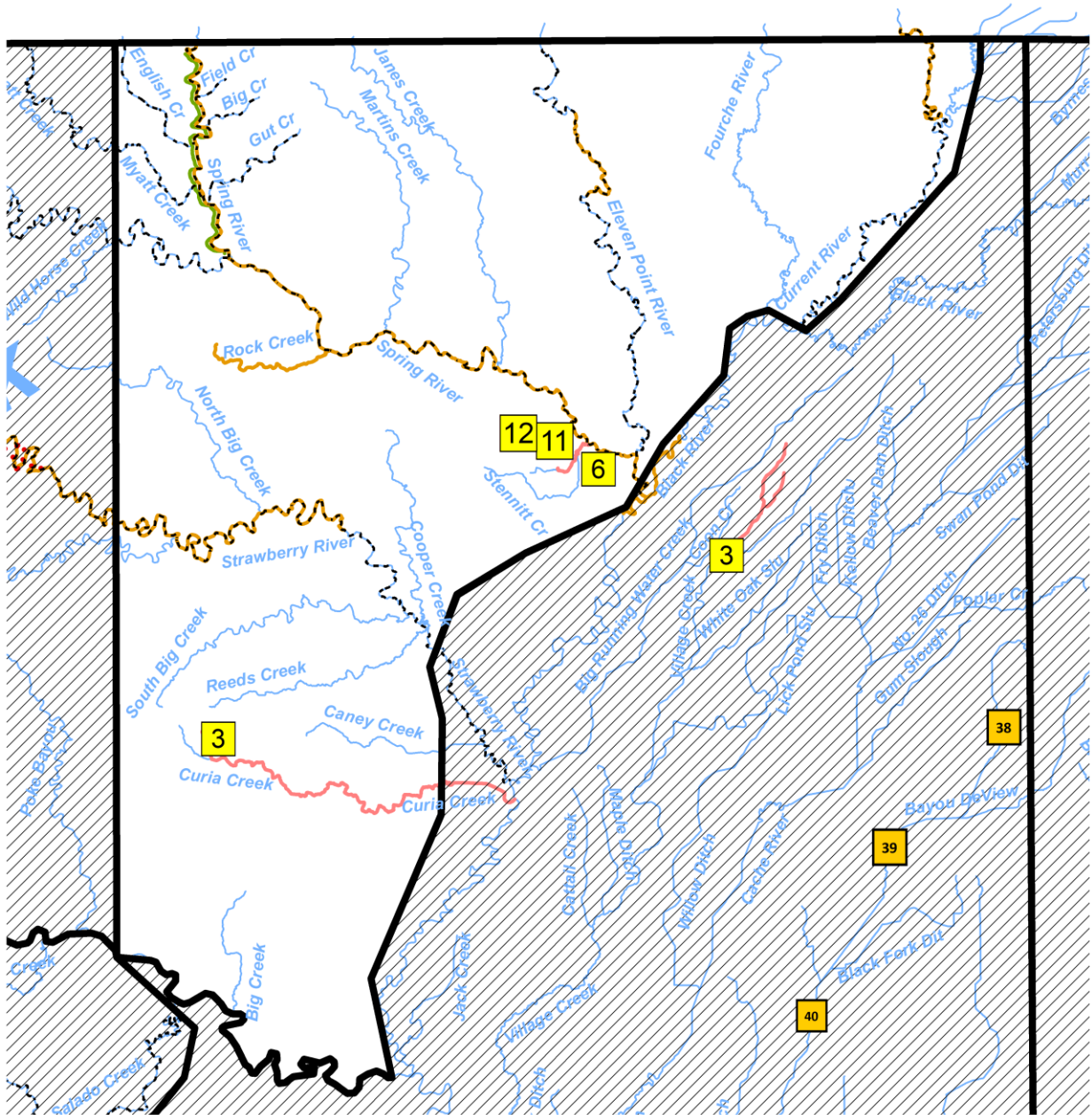


Plate OH-4 (Ozark Highlands)

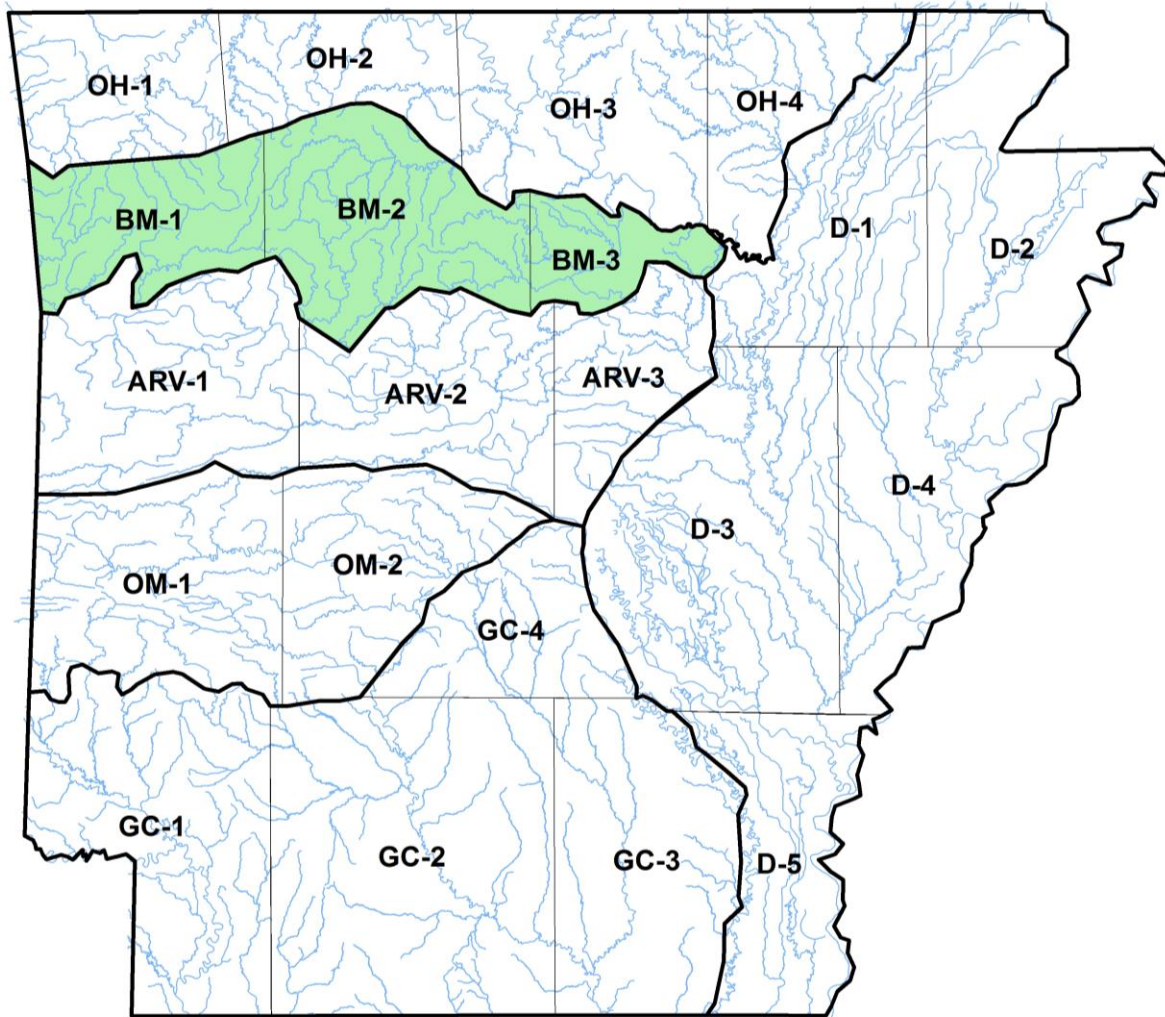


LEGEND

- - Extraordinary Resource Waters
- Natural and Scenic Waterways
- Variation by UAA
- Ecologically Sensitive Waterbodies
- ESW Caves, Springs, and Seeps
- Trout_Waters



Index to Plates of the Boston Mountains



DESIGNATED USES: BOSTON MOUNTAINS ECOREGION

(Plates BM-1, BM-2, BM-3)

Extraordinary Resource Waters

Middle and Devils Forks of the Little Red River including Beech Creek, Tomahawk Creek, Turkey Creek, Lick Creek, Raccoon Creek, and Little Raccoon Creek (BM-2, BM-3)
Archey Creek from headwaters to confluence with South Fork Little Red River (BM-2)
Illinois Bayou including North, Middle and East Forks (BM-2)
Big Piney Creek (BM-2)
Hurricane Creek (BM-2)
Mulberry River (BM-1, BM-2)
Lee Creek from state line upstream to headwaters (BM-1)
Salado Creek (BM-3)
Kings River (BM-1)
Richland Creek and Falling Water Creek (BM-2)
Buffalo River (BM-1, BM-2)

Natural and Scenic Waterways

Mulberry River (BM-1, BM-2)
Buffalo River (BM-1, BM-2)
Kings River (BM-1)
Big Piney Creek (BM-2)*
Hurricane Creek (BM-2)*
Richland Creek (BM-2)*

Ecologically Sensitive Waterbodies

Middle, South, and Devils Forks of Little Red River including Beech Creek, Tomahawk Creek, Turkey Creek, Lick Creek, Raccoon Creek, Little Raccoon Creek, and Archey Creek above Greers Ferry Reservoir - location of endemic yellowcheek darter and endangered speckled pocketbook mussel (except Devils Fork) (BM-2, BM-3)
Foshee Cave - location of aquatic cave snail (BM-3)
Upper White River - location of longnose darter (BM-1)

Primary Contact Recreation - all streams with watersheds of greater than 10 mi² and all lakes/reservoirs**

Secondary Contact Recreation - all waters**

Domestic, Industrial and Agricultural Water Supply - all waters**

Aquatic Life**

Trout

Greers Ferry Reservoir below Narrows (BM-3)
Little Red River below Greers Ferry Dam (BM-3)

Lakes and Reservoirs – all

*As designated in the National Wild and Scenic Rivers System

** Except for those waters with designated use variations supported by Use Attainability Analysis or other investigations.

Streams

Seasonal Boston Mountain aquatic life- all waters with watersheds of less than 10 mi² except as otherwise provided in Reg.2.505

Perennial Boston Mountain aquatic life- all waters with 10 mi² watershed or larger and those waters where discharges equal or exceed 1 cfs

Use Variations Supported by Use Attainability Analysis

None

SPECIFIC STANDARDS: BOSTON MOUNTAINS ECOREGION

(Plates BM-1, BM-2, BM-3)

	<u>Streams</u>	<u>Lakes and Reservoirs</u>
Temperature °C (°F)*	31 (87.8)	32 (89.6)
Trout waters	20 (68)	
Turbidity (NTU) (base/all)	10/19	25/45
Minerals	see Reg. 2.511	see Reg. 2.511
Dissolved Oxygen (mg/L) **	<u>Pri.</u> <u>Crit</u>	see Reg. 2.505
<10 mi ² watershed	6 2	
10 mi ² and greater	6 6	
Trout waters	6 6	
All other standards	(same as statewide)	

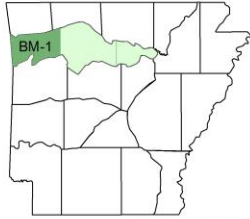
Site Specific Standards Variations Supported by Use Attainability Analysis

None

* Increase over natural temperatures may not be more than 2.8°C (5°F).

** At water temperatures ≤10°C or during March, April and May when stream flows are 15 cfs and greater, the primary season dissolved oxygen standard will be 6.5 mg/L. When water temperatures exceed 22°C, the critical season dissolved oxygen standard may be depressed by 1 mg/L for no more than 8 hours during a 24-hour period.

Plate BM-1 (Boston Mountains)



LEGEND	
- - -	Extraordinary Resource Waters
• • •	Natural and Scenic Waterways
—	Variation by UAA
—	Ecologically Sensitive Waterbodies
■	ESW Caves, Springs, and Seeps
—	Trout_Waters

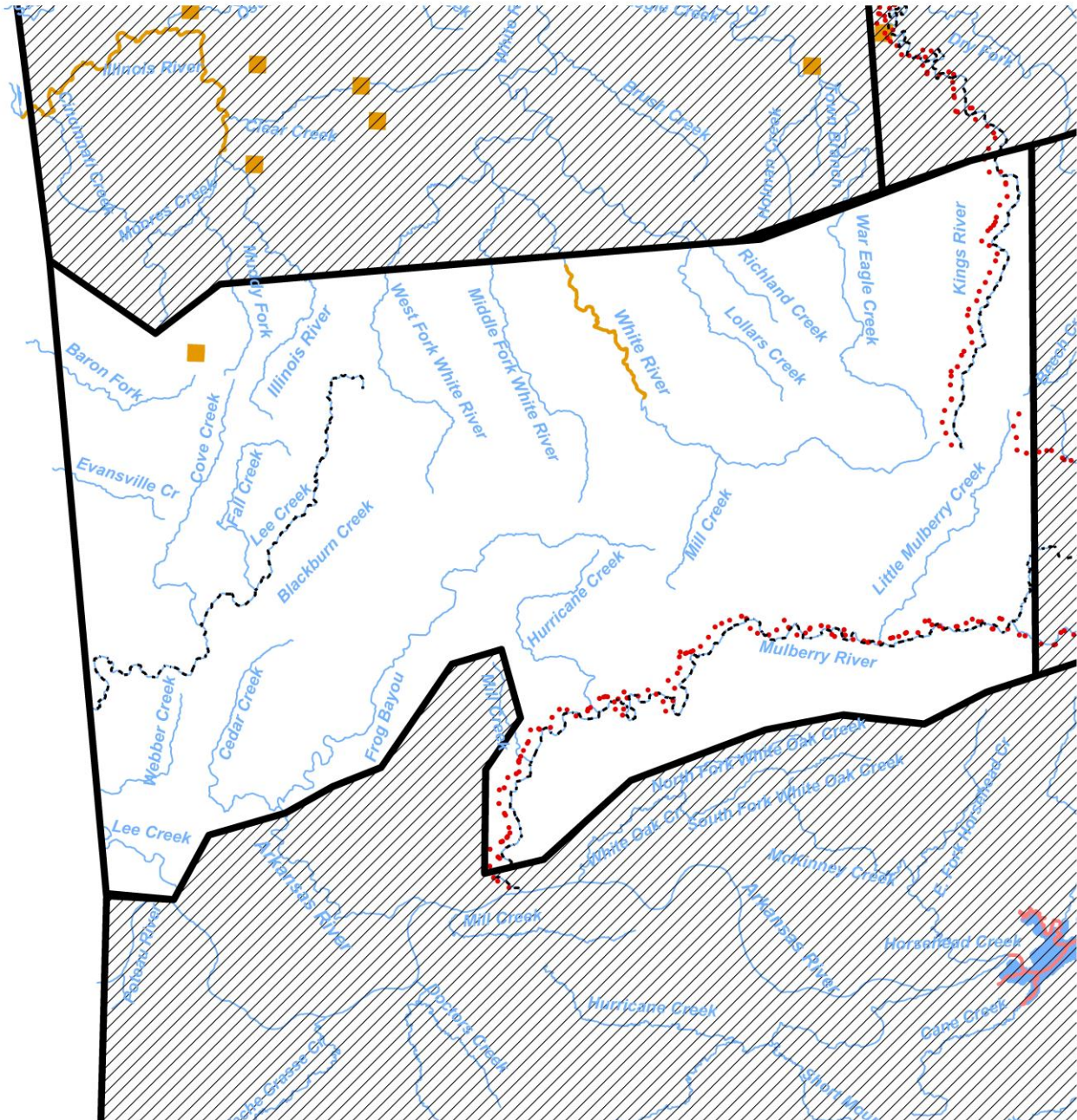
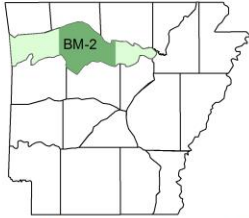


Plate BM-2 (Boston Mountains)



LEGEND	
- - -	Extraordinary Resource Waters
• • •	Natural and Scenic Waterways
—	Variation by UAA
■	Ecologically Sensitive Waterbodies
■	ESW Caves, Springs, and Seeps
—	Trout_Waters

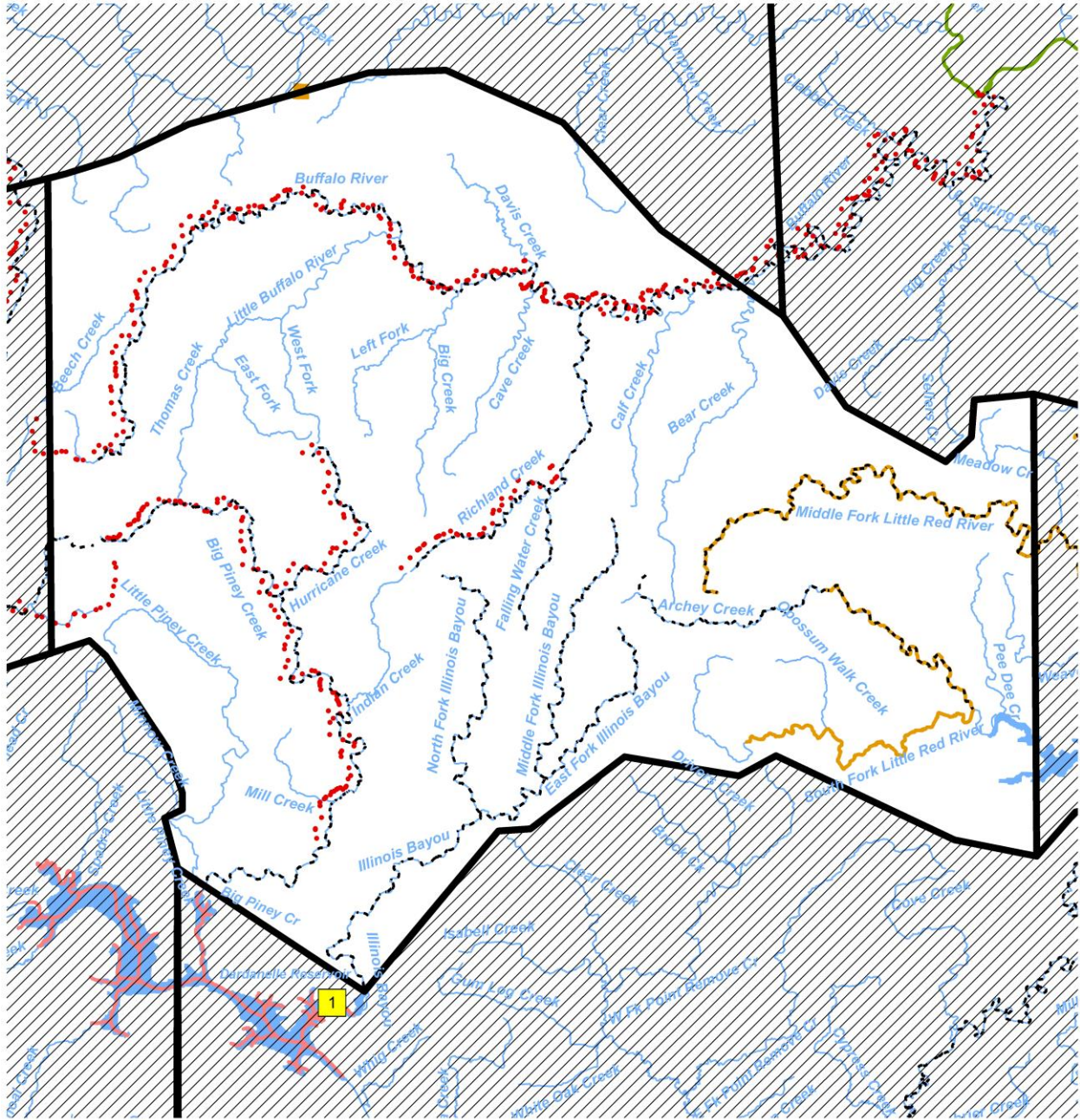
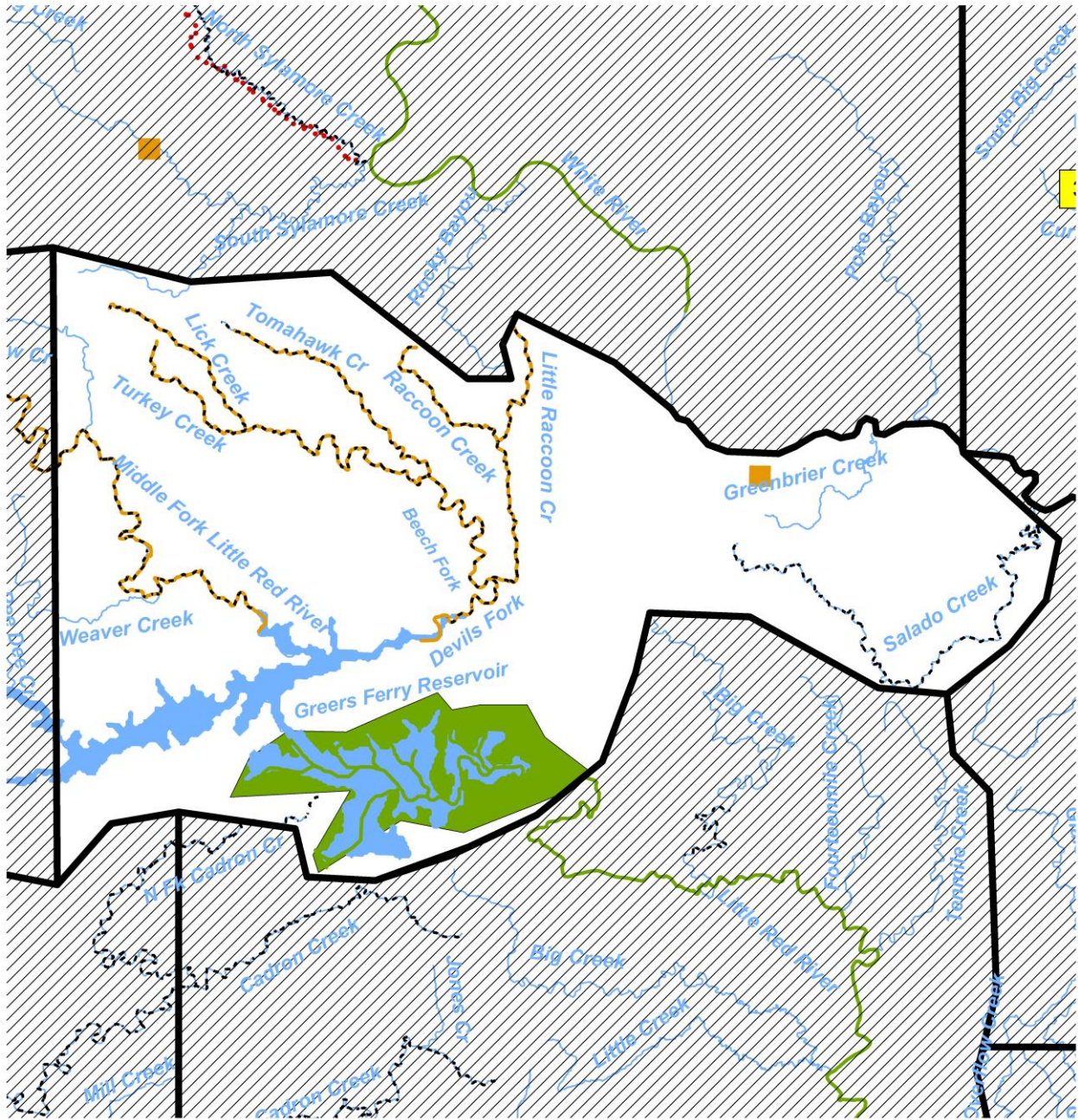


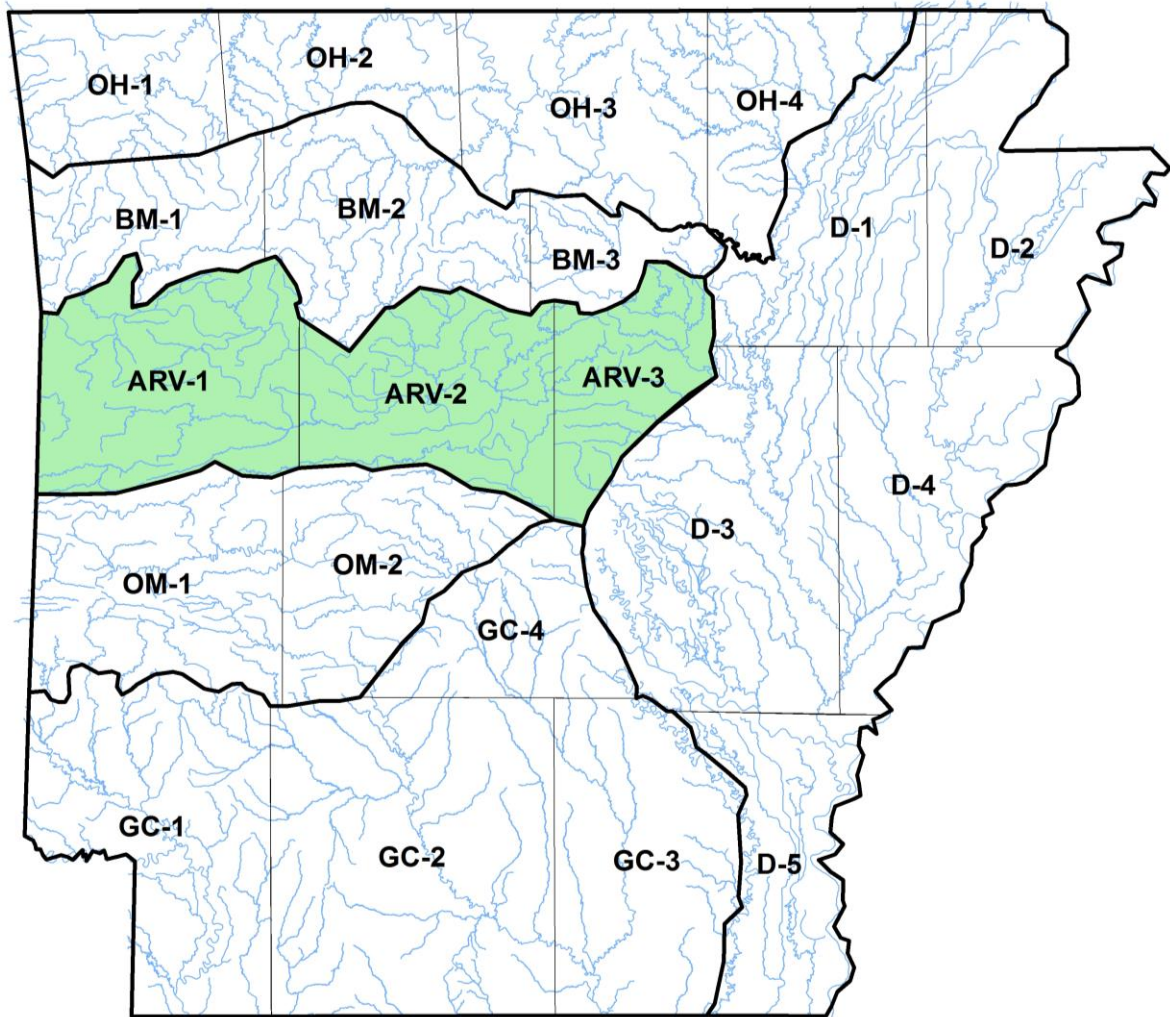
Plate BM-3 (Boston Mountains)



LEGEND	
- - -	Extraordinary Resource Waters
• • •	Natural and Scenic Waterways
- - -	Variation by UAA
▭	Ecologically Sensitive Waterbodies
▭	ESW Caves, Springs, and Seeps
▭	Trout_Waters



Index to Plates of the Arkansas River Valley



DESIGNATED USES: ARKANSAS RIVER VALLEY ECOREGION

(Plates ARV-1, ARV-2, ARV-3)

Extraordinary Resource Waters

Cadron Creek including North Fork and East Fork (ARV-2, ARV-3)

Mulberry River (ARV-1)

Big Creek adjacent to natural areas (ARV-3)

Natural and Scenic Waterway

Mulberry River (ARV-1)

Ecologically Sensitive Waterbodies

None

Primary Contact Recreation - all streams with watersheds of greater than 10 mi² and all lakes/reservoirs**

Secondary Contact Recreation - all waters**

Domestic, Industrial and Agricultural Water Supply - all waters**

Aquatic Life**

Trout

Little Red River below Greers Ferry Dam to Searcy (ARV-3)

Lakes and Reservoirs - all

Streams

Seasonal Arkansas River Valley aquatic life use - all streams with watersheds of less than 10 mi² except as otherwise provided in Reg. 2.505

Perennial Arkansas River Valley aquatic life - all streams with watersheds of 10 mi² or larger and those waters where discharges equal or exceed 1 cfs

Site Specific Designated Use Variations Supported by Use Attainability Analysis

Poteau River from U.S. Business Highway 71 to Oklahoma state line - no domestic water supply use (ARV-1,#2 and #4)

Unnamed tributary to Poteau River at Waldron - no domestic water supply use (ARV-1,#3)

**Except for those waters with designated use variations supported by Use Attainability Analysis or other investigations.

SPECIFIC STANDARDS: ARKANSAS RIVER VALLEY ECOREGION

(Plates ARV-1, ARV-2, ARV-3)

	<u>Streams</u>	<u>Lakes and Reservoirs</u>
Temperature °C (°F)*	31 (87.8)	32 (89.6)
Trout waters	20 (68)	
Arkansas River	32 (89.6)	
Turbidity(NTU) (base/all)	21/40	25/45
Arkansas River(base/all)	50/52	
Minerals	see Reg. 2.511	see Reg. 2.511
Dissolved Oxygen (mg/L)**	<u>Pri.</u> <u>Crit.</u>	see Reg. 2.505
<10 mi ² watershed	5 2	
10 to 150 mi ²	5 3	
151 mi ² to 400 mi ²	5 4	
>400 mi ² watershed	5 5	
Trout waters	6 6	
All other standards	(same as statewide)	

Site Specific Standards Variations Supported by Use Attainability Analysis

Dardanelle Reservoir - maximum temperature 35°C (95°F) (limitation of 2.8°C above natural temperature does not apply) (ARV-2, #1)

Poteau River from Scott County Road 59 to Oklahoma state line - chlorides - 120 mg/L; sulfates - 60 mg/L; TDS - 500 mg/L (ARV-1, #2)

Poteau River from confluence with Unnamed tributary to Scott County Road 59 – chlorides 185 mg/L; sulfates 200 mg/L; TDS 786 mg/L (ARV-1, #4) †

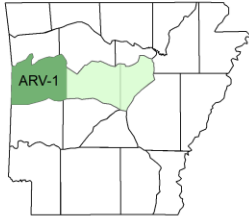
Unnamed tributary from Tyson-Waldron Outfall 001 to confluence with the Poteau River - chlorides 180 mg/L; sulfates - 200 mg/L; TDS - 870 mg/L (ARV-1, #3) †

* Increase over natural temperatures may not be more than 2.8°C (5°F).

** At water temperatures ≤10°C or during March, April and May when stream flows are 15 cfs and greater, the primary season dissolved oxygen standard will be 6.5 mg/L. When water temperatures exceed 22°C, the critical season dissolved oxygen standard may be depressed by 1 mg/L for no more than 8 hours during a 24-hour period.

† Not applicable for clean water act purposes until approved by EPA.

Plate ARV-1 (Arkansas River Valley)



LEGEND

- - Extraordinary Resource Waters
- Natural and Scenic Waterways
- Variation by UAA
- Ecologically Sensitive Waterbodies
- ESW Caves, Springs, and Seeps
- Trout_Waters

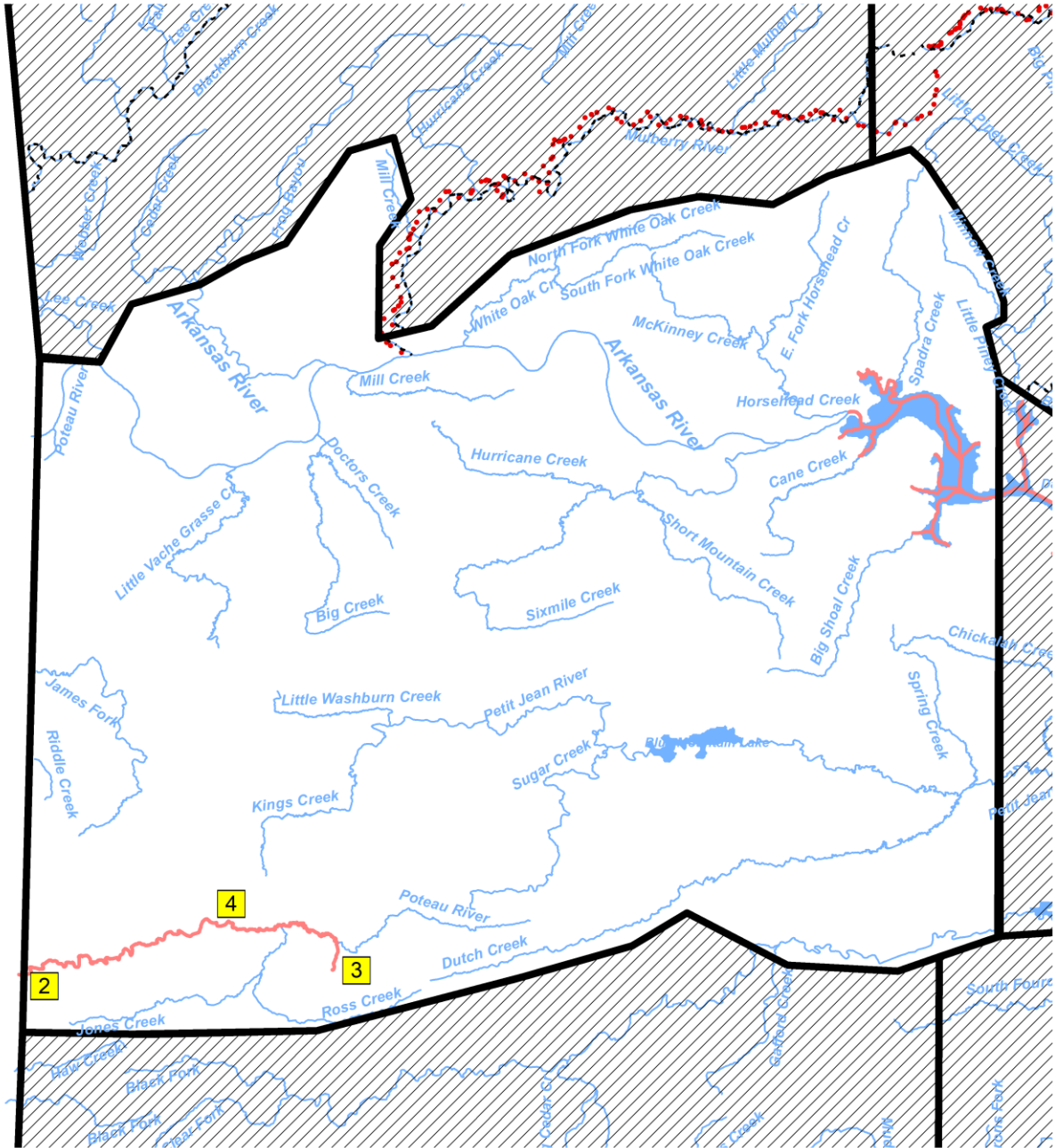


Plate ARV-2 (Arkansas River Valley)



LEGEND

- - Extraordinary Resource Waters
- Natural and Scenic Waterways
- Variation by UAA
- Ecologically Sensitive Waterbodies
- ESW Caves, Springs, and Seeps
- Trout_Waters

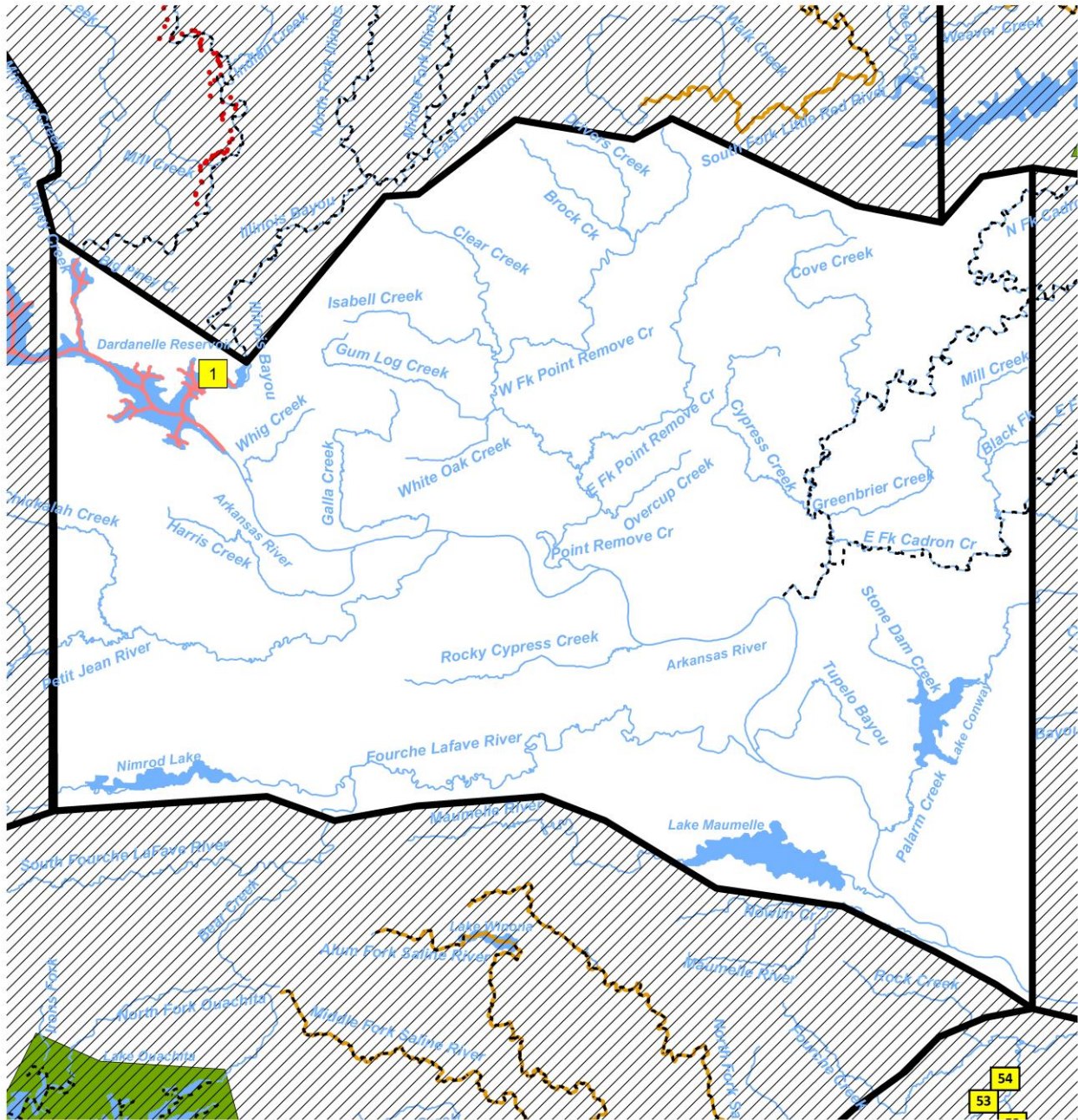
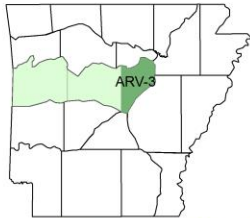
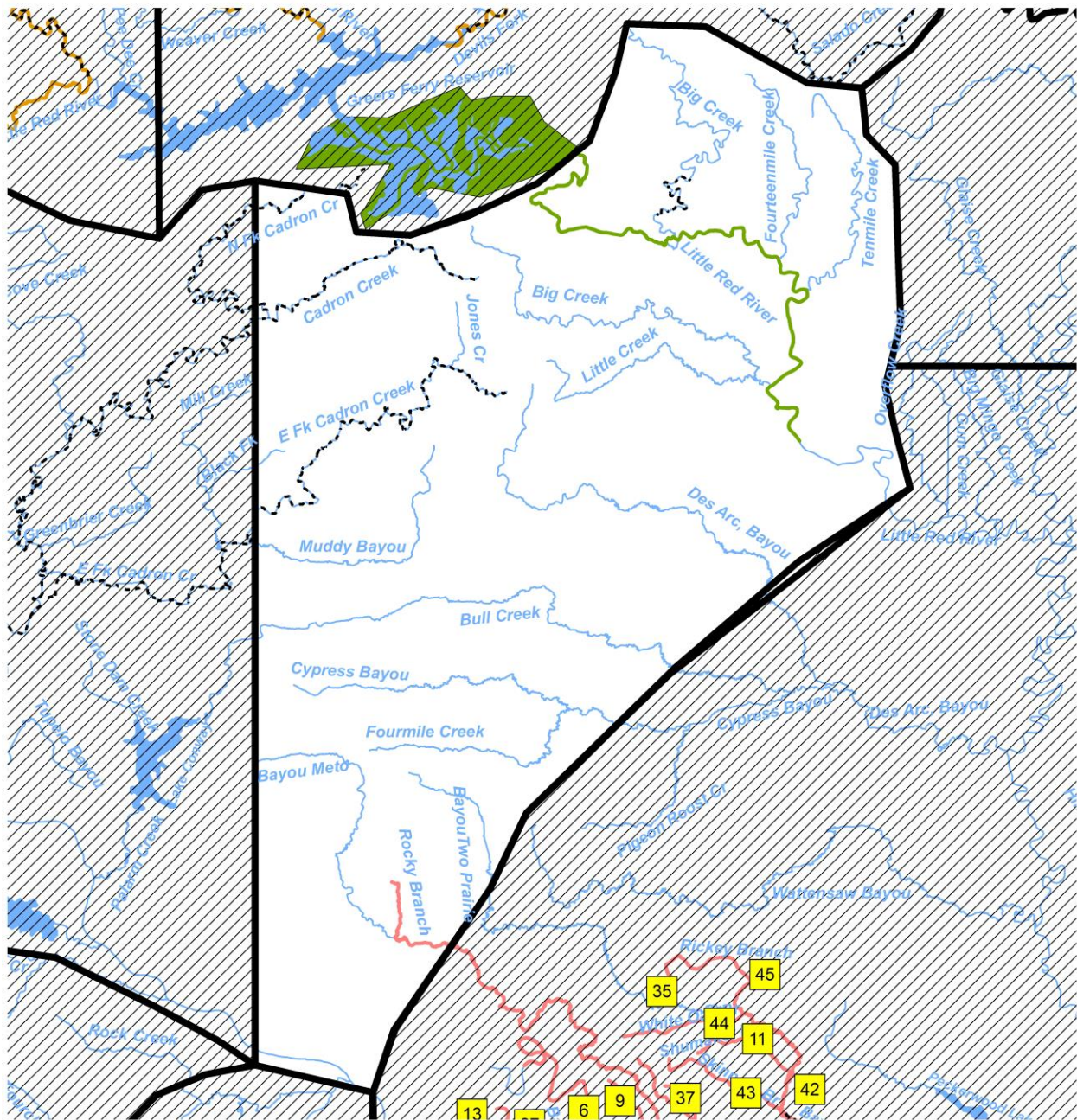


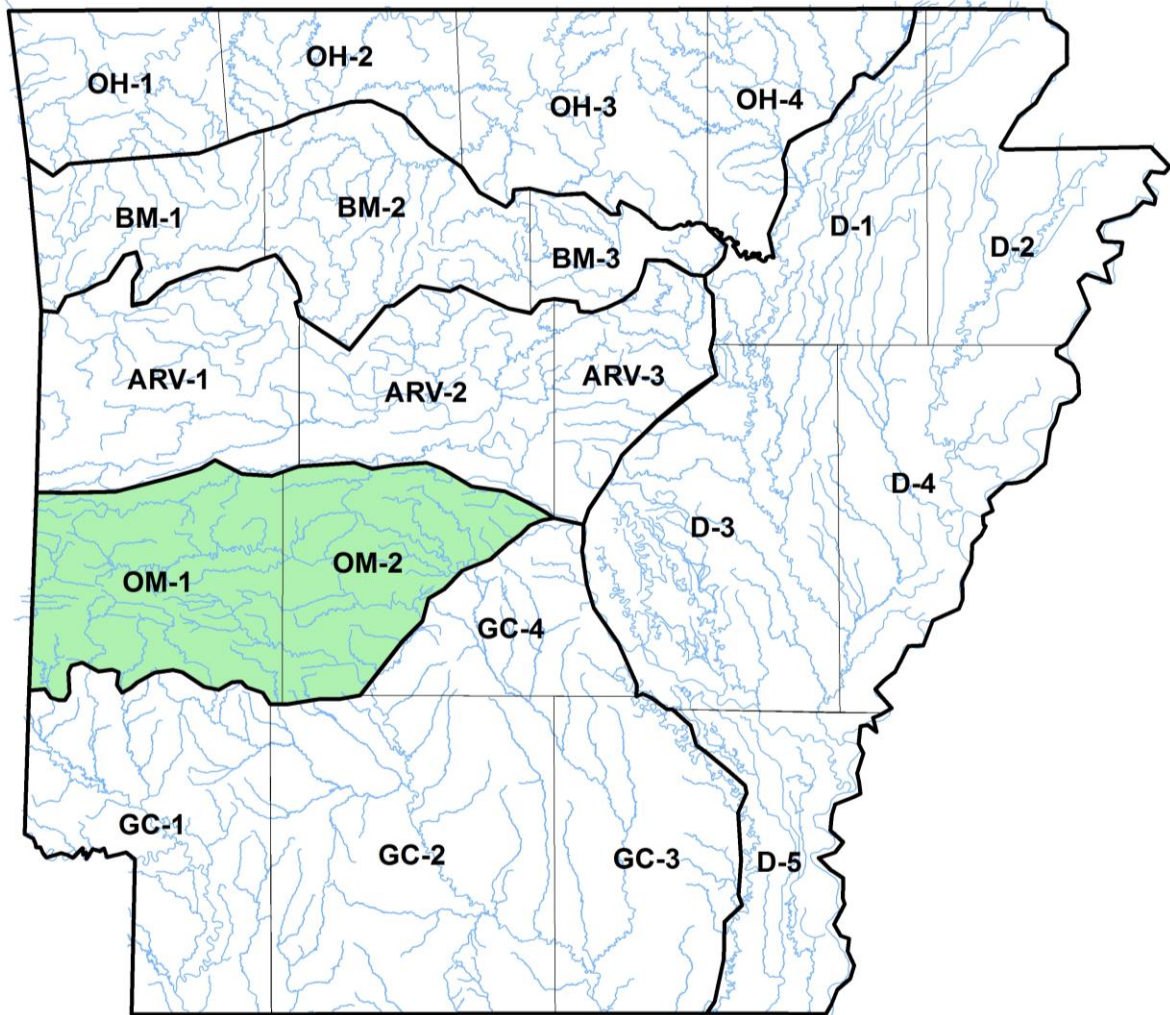
Plate ARV-3 (Arkansas River Valley)



LEGEND	
- - -	Extraordinary Resource Waters
•	Natural and Scenic Waterways
—	Variation by UAA
▨	Ecologically Sensitive Waterbodies
■	ESW Caves, Springs, and Seeps
■	Trout Waters



Index to Plates of the Ouachita Mountains



DESIGNATED USES: OUACHITA MOUNTAIN ECOREGION

(Plates OM-1, OM-2)

Extraordinary Resource Waters

Lake Ouachita (OM-1, OM-2)

DeGray Reservoir (OM-2)

Saline River - entire segment including North, Alum, Middle and South Forks (OM-2)

Caddo River - above DeGray Reservoir (OM-1, OM-2)

South Fork Caddo River (OM-1)

Cossatot River - above Gillham Reservoir (OM-1)

Caney Creek (OM-1)

Little Missouri River - above Lake Greeson (OM-1)

Mountain Fork River (OM-1)

Big Fork Creek - adjacent to natural area (OM-1)

Natural and Scenic Waterway

Cossatot River above Gillham Reservoir (OM-1)

Little Missouri River above Lake Greeson (OM-1)

Brushy Creek (OM-1)*

Ecologically Sensitive Waterbodies

Ouachita River above Lake Ouachita - location of Caddo madtom, longnose darter, peppered shiner and threatened Arkansas fatmucket Mussel (OM-1)

South Fork Ouachita River - location of Arkansas fatmucket mussel and Caddo madtom (OM-1)

Caddo River and all tributaries above DeGray Reservoir - location of endemic paleback darter, Caddo madtom and threatened Arkansas fatmucket Mussel (OM-1, OM-2)

Mountain Fork River - location of threatened leopard darter (OM-1)

Cossatot River above Gillham Reservoir - location of threatened leopard darter (OM-1)

Saline River including Alum, Middle, North and South Forks, and Ten Mile Creek - location of endemic Ouachita madtom and threatened Arkansas fatmucket Mussel (except South fork and Ten Mile Creek) (OM-2)

Little Missouri River above Lake Greeson - location of Caddo madtom

Mayberry Creek (tributary to Hallman's Creek) - location of paleback darter (OM-2)

Robinson Creek - location of threatened leopard darter (OM-1)

Primary Contact Recreation - all streams with watersheds of greater than 10 mi² and all lakes/reservoirs**

Secondary Contact Recreation - all waters**

Domestic, Industrial and Agricultural Water Supply - all waters**

Aquatic Life**

Trout

Lake Ouachita (lower portion) (OM-2)

Ouachita River from Blakely Mt. Dam to Hwy. 270 bridge (OM-2)

Lakes and Reservoirs – all

*As designated in the National Wild and Scenic Rivers System

**Except for those waters with designated use variations supported by Use Attainability Analysis or other investigations.

Aquatic Life**

Streams

Seasonal Ouachita Mountain Ecoregion aquatic life - all streams with watersheds of less than 10 mi² except as otherwise provided in Reg. 2.505

Perennial Ouachita Mountain Ecoregion aquatic life - all streams with watershed of 10 mi² or larger and those waters where discharges equal or exceed 1cfs

Site Specific Designated Use Variations Supported by Use Attainability Analysis

Rolling Fork from unnamed trib. A at Grannis to DeQueen Reservoir - no domestic water supply use (OM-1, #2)

Unnamed tributaries A and A1 at Grannis - no domestic water supply use (OM-1, #3)

SPECIFIC STANDARDS: OUACHITA MOUNTAIN ECOREGION

(Plates OM-1, OM-2)

	<u>Streams</u>	<u>Lakes and Reservoirs</u>
Temperature °C (°F)*	30 (86)	32 (89.6)
Trout waters	20 (68)	
Turbidity (NTU) (base/all)	10/18	25/45
Minerals	see Reg. 2.511	see Reg. 2.511
Dissolved Oxygen (mg/L) **	<u>Pri.</u> <u>Crit</u>	see Reg. 2.505
<10 mi ² watershed	6 2	
10 mi ² and greater	6 6	
Trout waters	6 6	
All other standards	(same as statewide)	

Site Specific Standards Variations Supported by Use Attainability Analysis

Prairie Creek: from headwaters to confluence with Briar Creek, critical season dissolved oxygen - 4 mg/L (OM-1, #1)

Rolling Fork from unnamed tributary A to DeQueen Reservoir - chlorides 130 mg/L; sulfates - 70 mg/L; total dissolved solids - 670 mg/L(OM-1, #2)

Unnamed tributaries A and A1 at Grannis - chlorides - 135 mg/L; sulfates - 70 mg/L; total dissolved solids - 700 mg/L (OM-1, #3)

South Fork Caddo River - sulfates 60 mg/L (OM-1, #4)

Back Valley Creek - sulfates 250 mg/L; total dissolved solids 500 mg/L (OM-1,#5)

Wilson Creek from a point approximately 0.85 mile upstream of Outfall 001 to UMETCO Outfall 001 – chlorides 56 mg/L; sulfates 250 mg/L; total dissolved solids 500 mg/L (OM-2, #6)

Wilson Creek downstream of UMETCO Outfall 001 to its mouth – chlorides 56 mg/L; sulfates 250 mg/L; total dissolved solids 500 mg/L (OM-2, #7)

*Increase over natural temperatures may not be more than 2.8°C (5°F).

**At water temperatures ≤10°C or during March, April and May when stream flows are 15 cfs and greater, the primary season dissolved oxygen standard will be 6.5 mg/L. When water temperatures exceed 22°C, the critical season dissolved oxygen standard may be depressed by 1 mg/L for no more than 8 hours during a 24-hour period.

Variations Supported by Environmental Improvement Project

Chamberlain Creek from headwaters to confluence with Cove Creek - sulfates 1,384 mg/L; total dissolved solids 2,261 mg/L; chlorides 68 mg/L (OM-2, #1) †

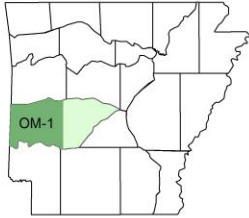
Cove Creek from the confluence with Chamberlain Creek to the Ouachita River - sulfates 250 mg/L; total dissolved solids 500 mg/L (OM-2, #2) †

Lucinda Creek from the confluence of Rusher Creek to the confluence with Cove Creek - sulfates 250 mg/L; total dissolved solids 500 mg/L (OM-2, #3) †

Rusher Creek from the confluence of the East and West Forks to confluence with Lucinda Creek - sulfates 250 mg/L; total dissolved solids 500 mg/L (OM-2, #4) †

† Not applicable for clean water act purposes until approved by EPA.

Plate OM-1 (Ouachita Mountains)



LEGEND	
- - -	Extraordinary Resource Waters
• • •	Natural and Scenic Waterways
—	Variation by UAA
—	Ecologically Sensitive Waterbodies
—	ESW Caves, Springs, and Seeps
—	Trout_Waters

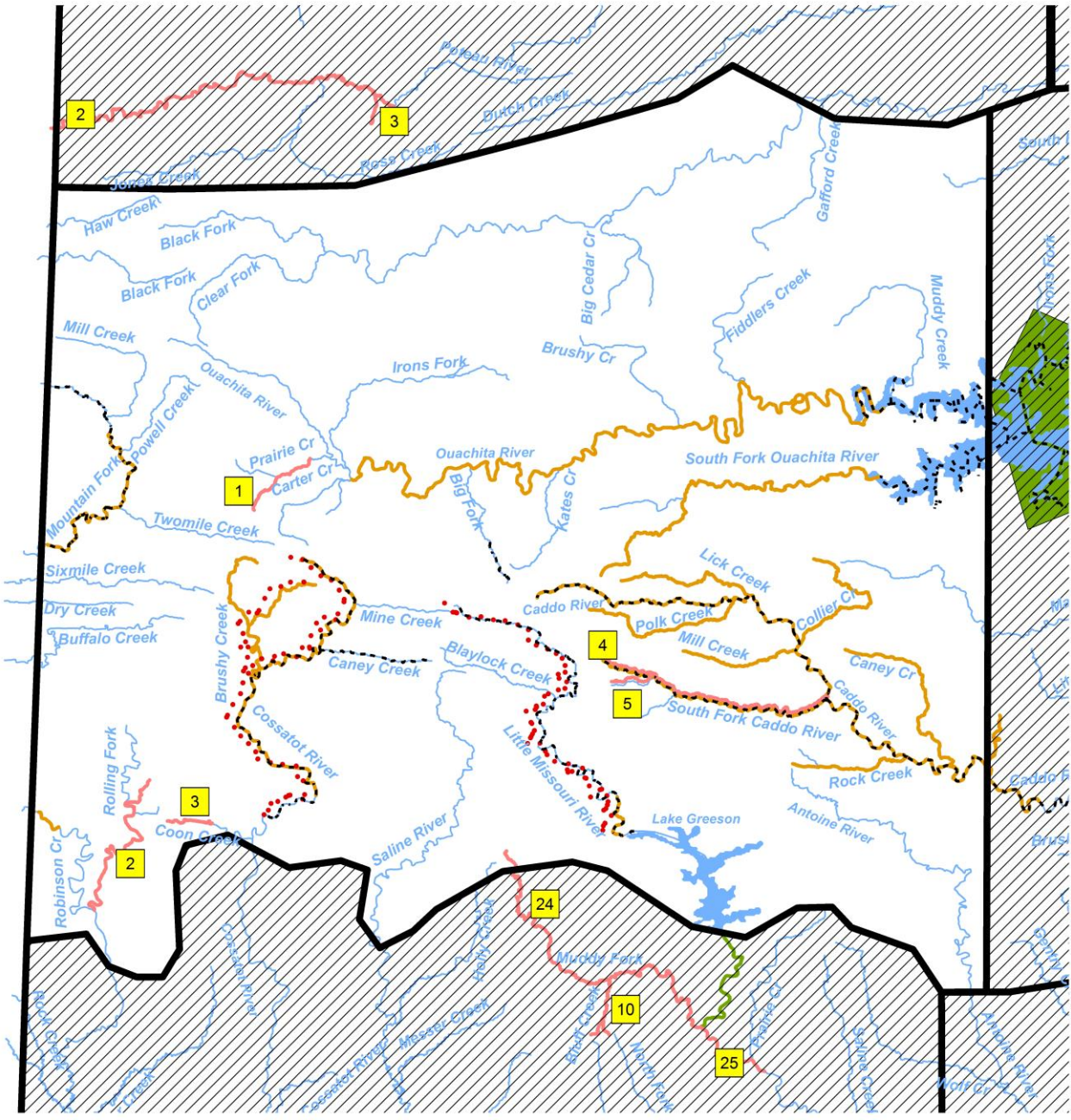
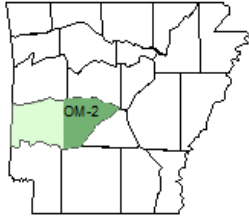
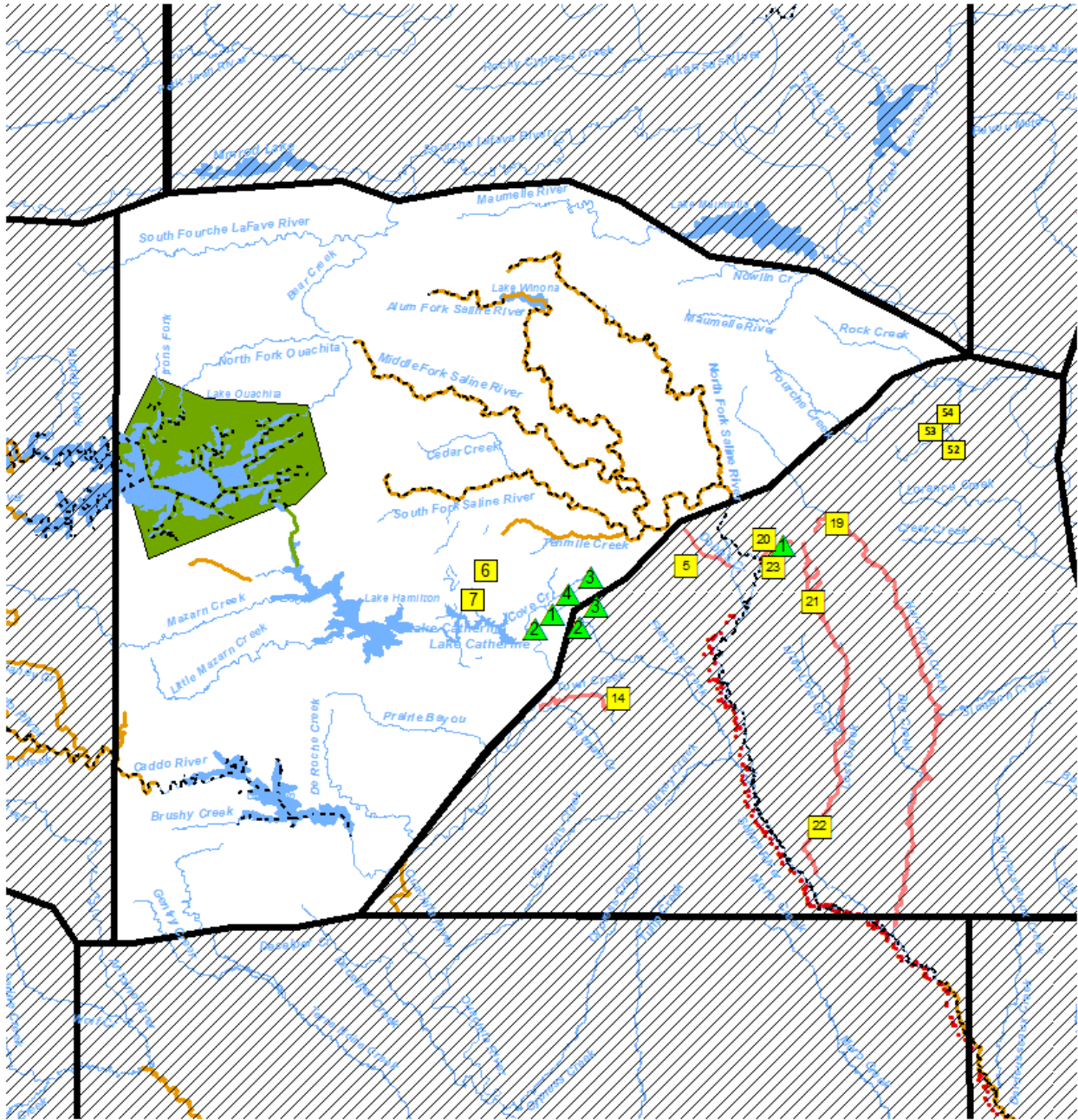


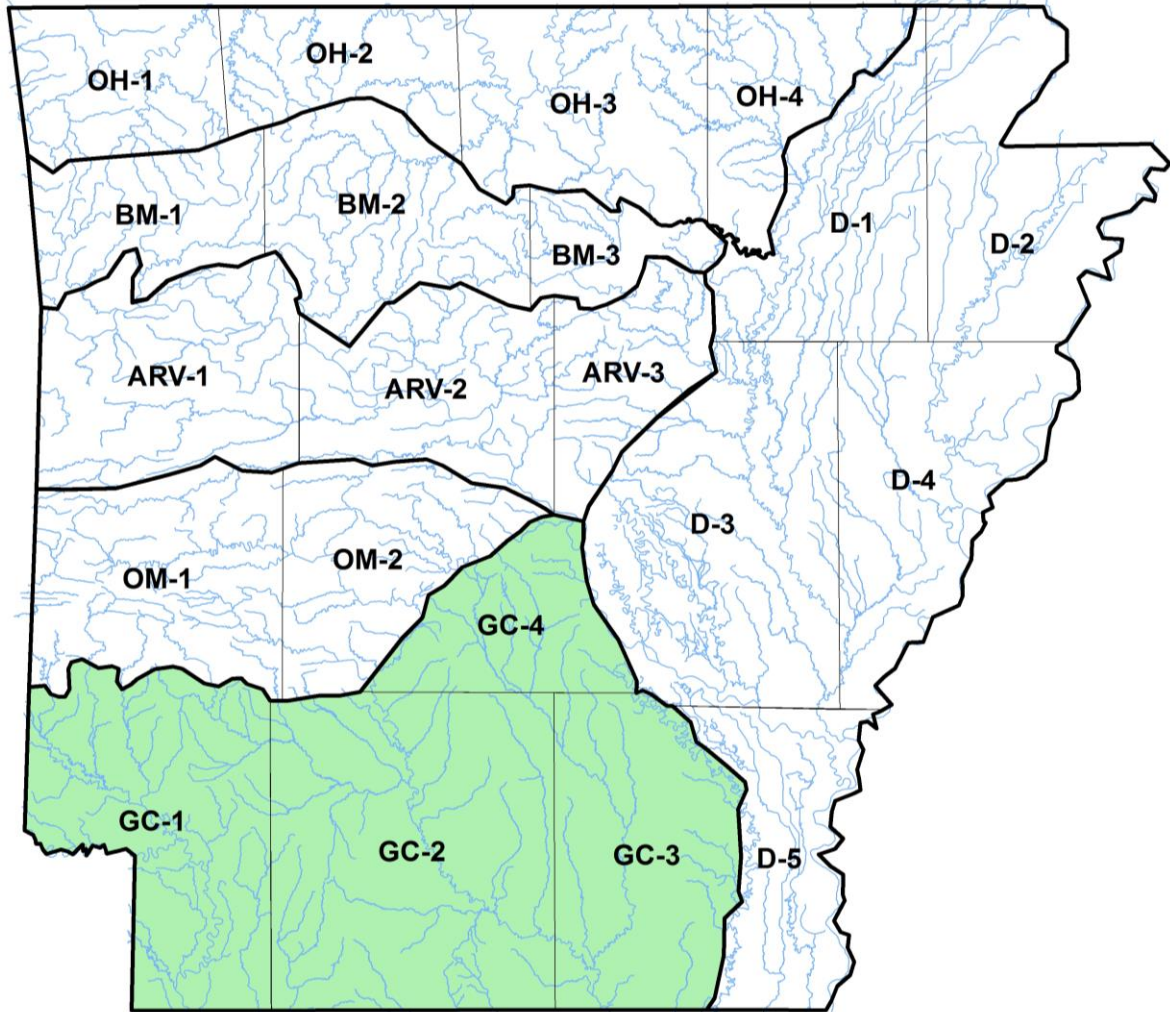
Plate OM-2 (Ouachita Mountains)



LEGEND	
- -	Extraordinary Resource Waters
•	Natural and Scenic Waterways
—	Variation by UAA
—	Ecologically Sensitive Waterbodies
—	ESW Caves, Springs, and Seeps
—	Trout Waters
▲	Variation by EIP



Index to Plates of the Gulf Coastal Plain



DESIGNATED USES: GULF COASTAL ECOREGION

(Plates GC-1, GC-2, GC-3, GC-4)

Extraordinary Resource Waters

Saline River (GC-3, GC-4)

Moro Creek - adjacent to natural area (GC-2)

Natural and Scenic Waterways

Saline River from the Grant-Saline County line to mouth (GC-3)

Ecologically Sensitive Waterbodies

Little River above Millwood Reservoir - location of Ouachita rock pocketbook and pink mucket mussels (GC-1)

Grassy Lake and Yellow Creek below Millwood Reservoir - unique ecosystem and biota (GC-1)

Lower Little Missouri River - location of peppered shiner and longnose darter (GC-2)

Lower Saline River - location of peppered shiner, crystal darter and goldstripe darter (GC-3)

Ouachita River near Arkadelphia - location of flat floater, Ouachita rock pocketbook and pink mucket mussels (GC-4)

Streams with Substantial Springwater Influence

L'Eau Fraix (GC-4)

Cypress Creek (GC-4)

East and West Fork Tulip Creeks (GC-4)

Others to be determined

Primary Contact Recreation - all streams with watersheds greater than 10 mi² and all lakes/reservoirs**

Secondary Contact Recreation - all waters**

Domestic, Industrial and Agricultural Water Supply - all waters**

Domestic Water Supply

Aquatic Life**

Trout

Little Missouri River from Narrows Dam to confluence with Muddy Fork (GC-1)

Lakes and Reservoirs - all

Streams

Seasonal Gulf Coastal aquatic life - all streams with watersheds of less than 10 mi² except as otherwise provided in Reg. 2.505

Perennial Gulf Coastal aquatic life - all streams with watersheds of 10 mi² or larger and those waters where discharges equal or exceed 1 cfs

**Except for those waters with designated use variations supported by Use Attainability Analysis or other investigations.

Site Specific Designated Use Variations Supported by Use Attainability Analysis

- Loutre Creek - perennial aquatic life use, except seasonal from railroad bridge to mouth (GC-2, #1)
Unnamed tributary to Smackover Creek - no fishable/swimmable uses (GC-2, #2)
Unnamed tributary to Flat Creek - no fishable/swimmable uses (GC-2, #4)
Dodson Creek - perennial aquatic life use (GC-4, #5)
Jug Creek - perennial aquatic life use (GC-2, #6)
Lick Creek - seasonal aquatic life use; no primary contact (GC-1, #7)
Coffee Creek and Mossy Lake - no fishable/swimmable or domestic water supply uses (GC-3, #8)
Red River from Oklahoma state line to confluence with Little River - No domestic water supply use (GC-1, #9)
Bluff Creek and unnamed tributary - no domestic water supply use (GC-1, #10)
Mine Creek from Highway 27 to Millwood Lake - no domestic water supply use (GC-1, #11)
Caney Creek - no domestic or industrial water supply use (GC-1, #12)
Bois d'Arc Creek from Caney Creek to Red River - no domestic or industrial water supply use (GC-1, #13)
Town Creek below Acme tributary - no domestic water supply (GC-4, #14)
Unnamed trib. from Acme - no domestic water supply (GC-4, #14)
Gum Creek - no domestic water supply use (GC-2, #15)
Loutre Creek from Highway 15 S. to the confluence of Bayou de Loutre – no domestic water supply use (GC-2, #41)
Unnamed trib 002 (UT002) – no domestic water supply use (GC-2, #31)
Unnamed trib 003 (UT003) – no domestic water supply use (GC-2, #34)
Unnamed trib 004 (UT004) – no domestic water supply use (GC-2, #32)
Bayou de Loutre from mouth of UT004 to Louisiana state line - no domestic water supply use (GC-2, #16)
Walker Branch - no domestic water supply use (GC-2, #17)
Little Cornie Bayou from Walker Branch to Arkansas/Louisiana state line - no domestic water supply use (GC-2, #18)
Unnamed trib to Little Cornie Bayou (UTLCB-2) - no domestic water supply use (GC-2, #18)
Alcoa unnamed trib to Hurricane Creek and Hurricane Creek - no domestic water supply use (GC-4, #19)
Holly Creek - no domestic water supply use (GC-4, #20)
Dry Lost Creek and Tribs. - no domestic water supply use (GC-4, #21)
Lost Creek - no domestic water supply use (GC-4, #22)
Albemarle unnamed trib (AUT) to Horsehead Creek - no domestic water supply use (GC-2, #27)
Horsehead Creek from AUT to mouth - no domestic water supply use (GC-2, #27)
Dismukes Creek and Big Creek to Bayou Dorcheat – no domestic water supply (GC-2, #28)
Boggy Creek from the discharge from Clean Harbors El Dorado LCC downstream to the confluence of Bayou de Loutre - no domestic water supply use (GC-2, #51)
Unnamed tributary to Flat Creek from EDCC Outfall 001 d/s to confluence with unnamed tributary A to Flat Creek - no domestic water supply use (GC-2, #37)
Unnamed tributary A to Flat Creek from mouth of EDCC 001 ditch to confluence with Flat Creek - no domestic water supply use (GC-2, #38)
Flat Creek from mouth of UTA to confluence with Haynes Creek - no domestic water supply use (GC-2, #39)
Haynes Creek from mouth of Flat Creek to confluence with Smackover Creek - no domestic water supply use (GC-2, #40)
Red River from the mouth of the Little River to the Arkansas/Louisiana state line – no domestic water supply use (GC-1, #55) †

SPECIFIC STANDARDS: GULF COASTAL ECOREGION

(Plates GC-1, GC-2, GC-3, GC-4)

	<u>Typical Streams</u>	<u>Spring Water Streams</u>	<u>Lakes and Reservoirs</u>
Temperature °C (°F)*	30 (86)	30 (86)	32 (89.6)
Ouachita River (state line to Little Missouri River)	32 (89.6)		
Red River	32 (89.6)		
Little River (from Millwood Lake to the Red River)	32 (89.6) †		
Turbidity (NTU) (base/all)	21/32	21/32	25/45
Red River (base/all)	50/150		
Minerals	see Reg. 2.511		see Reg. 2.511
Dissolved Oxygen (mg/L) **	<u>Pri.</u>	<u>Crit.</u>	see Reg. 2.505
<10 mi ² watershed	5	2	
10 mi ² - 500 mi ²	5	3	
>500 mi ² watershed	5	5	
All sizes (springwater influenced)		6	5
All other standards	(same as statewide)		

*Increase over natural temperatures may not be more than 2.8°C (5°F).

**At water temperatures ≤10°C or during March, April and May when stream flows are 15 cfs and greater, the primary season dissolved oxygen standard will be 6.5 mg/L. When water temperatures exceed 22°C, the critical season dissolved oxygen standard may be depressed by 1 mg/L for no more than 8 hours during a 24-hour period

Site Specific Standards Variations Supported by Use Attainability Analysis

Loutre Creek - from headwaters to railroad bridge, critical season dissolved oxygen standard - 3 mg/L; primary season - 5 mg/L; from railroad bridge to mouth, critical season dissolved oxygen - 2 mg/L (GC-2, #1)

Unnamed tributary to Smackover Creek - headwaters to Smackover Creek, year round dissolved oxygen criteria - 2 mg/L (GC-2, #2)

Unnamed tributary to Flat Creek - from headwaters to Flat Creek, year round dissolved oxygen criteria - 2 mg/L (GC-2, #4)

Dodson Creek - from headwaters to confluence with Saline River, critical season dissolved oxygen standard - 3 mg/L (GC-4, #5)

Jug Creek - from headwaters to confluence with Moro Creek, critical season dissolved oxygen standard - 3 mg/L (GC-2, #6)

Lick Creek - from headwaters to Millwood Reservoir, critical season dissolved oxygen standard - 2 mg/L (GC-1, #7)

Coffee Creek and Mossy Lake - exempt from Reg. 2.406 and Chapter Five (GC-3, #8)

Red River from Oklahoma state line to confluence with Little River - total dissolved solids - 850 mg/L (GC-1, #9)

Bluff Creek and unnamed trib. - sulfates 651 mg/L; total dissolved solids 1033 mg/L (GC-1, #10)

Muddy Fork Little Missouri River - sulfates 250 mg/L; total dissolved solids 500 mg/L (GC-1, #24)

Little Missouri River - sulfates 90 mg/L; total dissolved solids 180 mg/L (GC-1, #25)

Mine Creek from Highway 27 to Millwood Lake - chlorides - 90 mg/L; sulfates - 65 mg/L; total dissolved solids - 700 mg/L (GC-1, #11)

Caney Creek - chlorides 113 mg/L; sulfates 283 mg/L; total dissolved solids 420 mg/L (GC-1,#12)
 Bois d'Arc Creek from Caney Creek to Red River - chlorides 113 mg/L; sulfates 283 mg/L; total dissolved solids 420 mg/L (GC-1,#13)
 Town Creek below Acme tributary - sulfates 200 mg/L; total dissolved solids 700 mg/L (GC-4,#14)
 Unnamed trib. from Acme - sulfates 330 mg/L; total dissolved solids 830 mg/L (GC-4,#14)
 Gum Creek - chlorides 104 mg/L; total dissolved solids 311 mg/L (GC-2,#15)
 Bayou de Loutre from Gum Creek to State line - Chlorides 250 mg/L; total dissolved solids 750 mg/L (GC-2,#16)
 Walker Branch - chlorides 180 mg/L; total dissolved solids 970 mg/L (GC-2,#17)
 Ouachita River - from Ouachita River mile (ORM) 223 to the Arkansas-Louisiana border (ORM 221.1), site specific seasonal dissolved oxygen criteria: 3 mg/L June and July; 4.5 mg/L August; 5 mg/L September through May. These seasonal criteria may be unattainable during or following naturally occurring high flows,(i.e., river stage above 65 feet measured at the lower gauge at the Felsenthal Lock and Dam, Station No.89-o, and also for the two weeks following the recession of flood waters below 65 feet), which occurs from May through August. Naturally occurring conditions which fail to meet criteria should not be interpreted as violations of these criteria (GC-3, #26)
 Alcoa unnamed trib. to Hurricane Cr. and Hurricane Cr. - see Reg. 2.511 (CG-4. #19)
 Holly Creek - See Reg. 2.511 (CG-4, #20)
 Saline River bifurcation - see Reg. 2.511 (GC-4, #23)
 Dry Lost Creek and tributaries - see Reg. 2.511 (GC-4, #21)
 Lost Creek - see Reg. 2.511 (GC-4, #22)
 Albemarle unnamed trib (AUT) to Horsehead Creek - chlorides 137 mg/L; total dissolved solids 383 mg/L (GC-2,#27)
 Horsehead Creek from AUT to mouth - chlorides 85 mg/L; total dissolved solids 260 mg/L(GC-2,#27)
 Bayou Dorcheat - sulfates 16 mg/L (GC-2,#27)
 Dismukes Creek – chlorides 26 mg/L; total dissolved solids 157 mg/L (GC-2, #28)
 Big Creek from Dismukes to Bayou Dorcheat – chlorides 20 mg/L; total dissolved solids 200 mg/L (GC-2, #28)
 Bayou de Loutre from Chemtura outfall to Loutre Creek – maximum water temperature 96°F (GC-2, #29)
 Unnamed tributary of Lake June below Entergy Couch Plant to confluence with Lake June – maximum water temperature 95 degrees F (limitation of 5 degrees above natural temperature does not apply) (GC-1, #30).
 Unnamed tributary to Flat Creek from EDCC Outfall 001 d/s to confluence with unnamed tributary A to Flat Creek Chloride 23 mg/L, Sulfate 125 mg/L, TDS 475 mg/L, (GC-2, #37) †
 Unnamed tributary A to Flat Creek from mouth of EDCC 001 ditch to confluence with Flat Creek, Chloride 16 mg/L, Sulfate 80 mg/L, TDS 315 mg/L, (GC-2, #38) †
 Boggy Creek from the discharge from Clean Harbors El Dorado LCC downstream to the confluence of Bayou de Loutre. Chloride, 631mg/L; Sulfate, 63 mg/L, total dissolved solids, 1360; Selenium, 15.6 u/L
 McGeorge Creek (headwaters to Willow Springs Branch) Sulfate, 250 mg/L; total dissolved solids, 432 mg/L (GC-4. #52)
 Willow Springs Branch (McGeorge Creek to Little Fourche Creek) Sulfate, 112 mg/L; total dissolved solids 247 mg/L (GC-4. #53)
 Little Fourche Creek (Willow Springs Branch to Fourche Creek) total dissolved solids, 179 mg/L (GC-4. #54)
 Red River from mouth of the Little River to the Arkansas/Louisiana state line, TDS 780 mg/L (GC-1, #55, 58)†
 Little River from Millwood Lake to the Red River, TDS 138mg/L; temperature 32 °C/89.6 °F (GC-1, #56)†

† Not applicable for clean water act purposes until approved by EPA.

Variations Supported by Environmental Improvement Project

Holly Creek; Selenium, Chronic Standard, 17µg/L (GC-4, #1)
 Reyburn Creek from headwaters to confluence of Francois Creek - sulfates 250 mg/L; total dissolved solids 500 mg/L (GC -4, #2) †
 Scull Creek from a point approximately 350 feet upstream of Clearwater Lake to Clearwater Lake (including Clearwater Lake) and from Clearwater Lake dam to confluence Reyburn Creek - sulfates 250 mg/L ; total dissolved solids 500 mg/L (GC-4, #3) †

† Not applicable for clean water act purposes until approved by EPA.

Variations Supported by Technical Adjustment

Red River from the Arkansas/Oklahoma state line to the mouth of the Little River, sulfate 250 mg/L, TDS 940 mg/L (GC-1, #57)†

Red River from mouth of the Little River to the Arkansas/Louisiana state line, sulfate 225 mg/L (GC-1, #58)†

Plate GC-1 (Gulf Coastal Plain)



LEGEND

- - Extraordinary Resource Waters
- Natural and Scenic Waterways
- Variation by UAA
- Ecologically Sensitive Waterbodies
- ESW Caves, Springs, and Seeps
- Trout_Waters

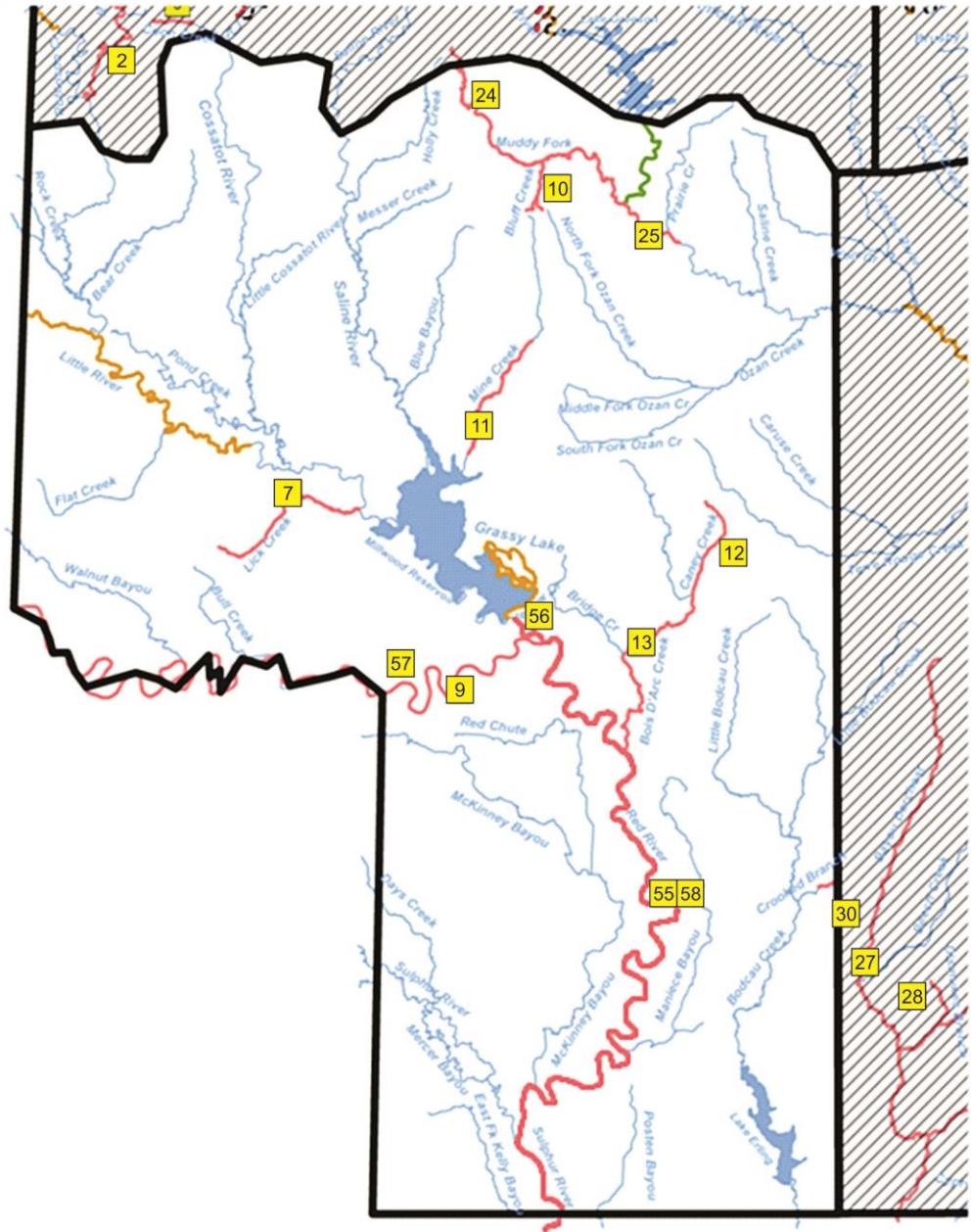


Plate GC-2 (Gulf Coastal Plain)



LEGEND

- - Extraordinary Resource Waters
- Natural and Scenic Waterways
- Variation by UAA
- Ecologically Sensitive Waterbodies
- ESW Caves, Springs, and Seeps
- Trout_Waters

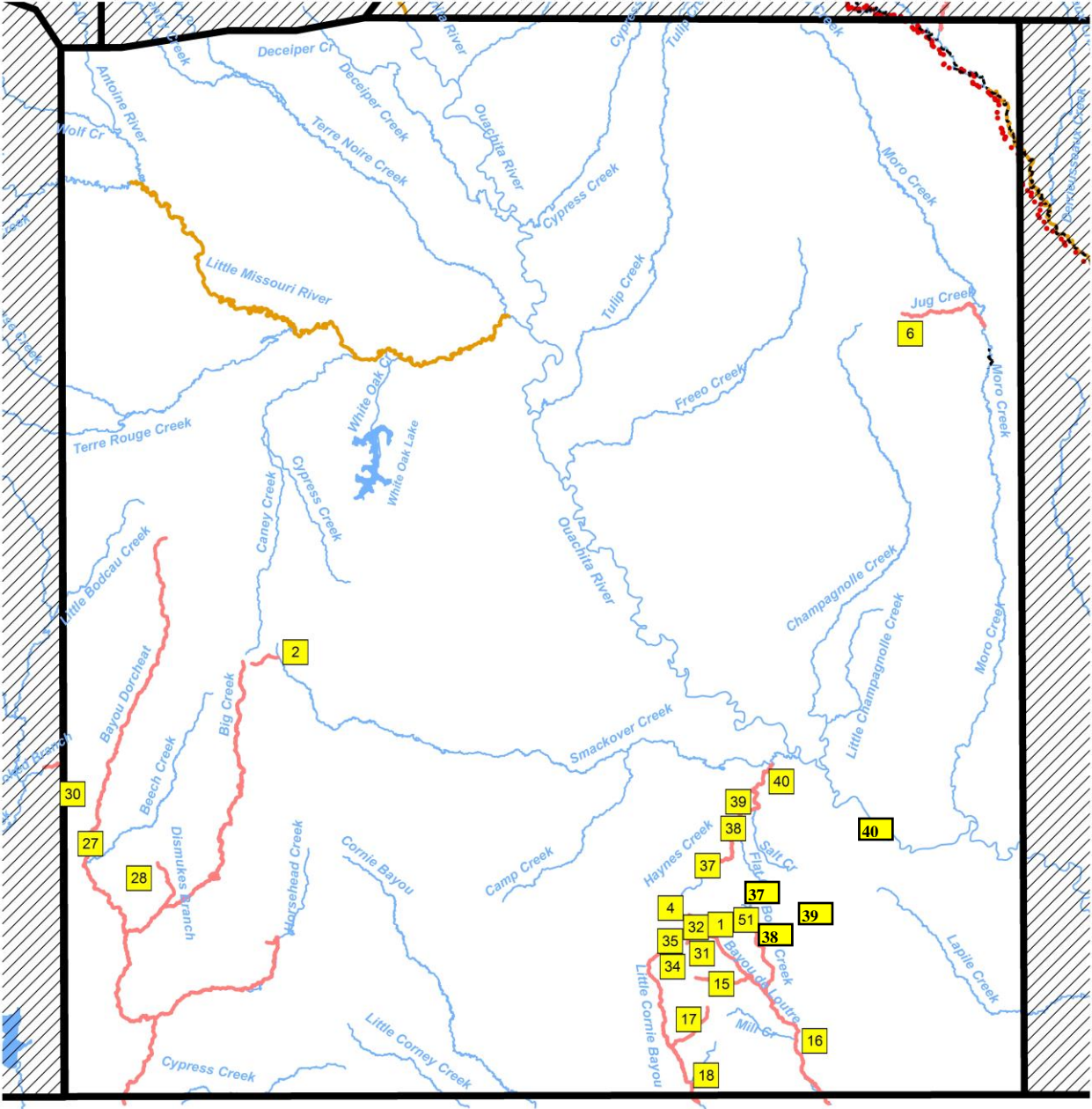
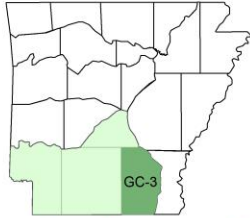


Plate GC-3 (Gulf Coastal Plain)



LEGEND

- - Extraordinary Resource Waters
- Natural and Scenic Waterways
- Variation by UAA
- Ecologically Sensitive Waterbodies
- ESW Caves, Springs, and Seeps
- Trout_Waters

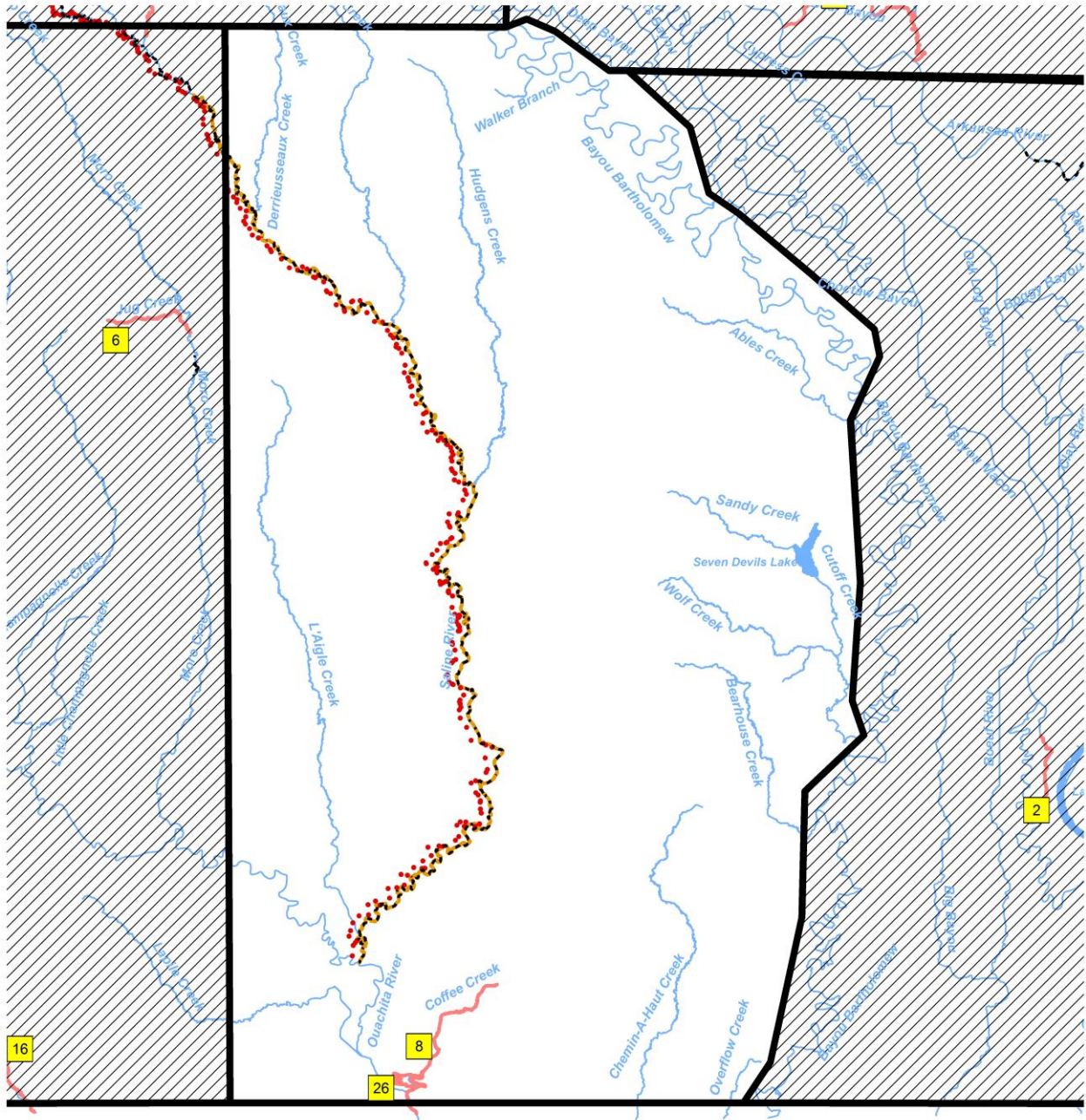
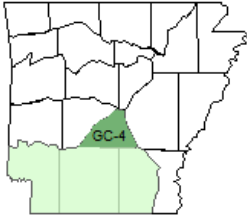
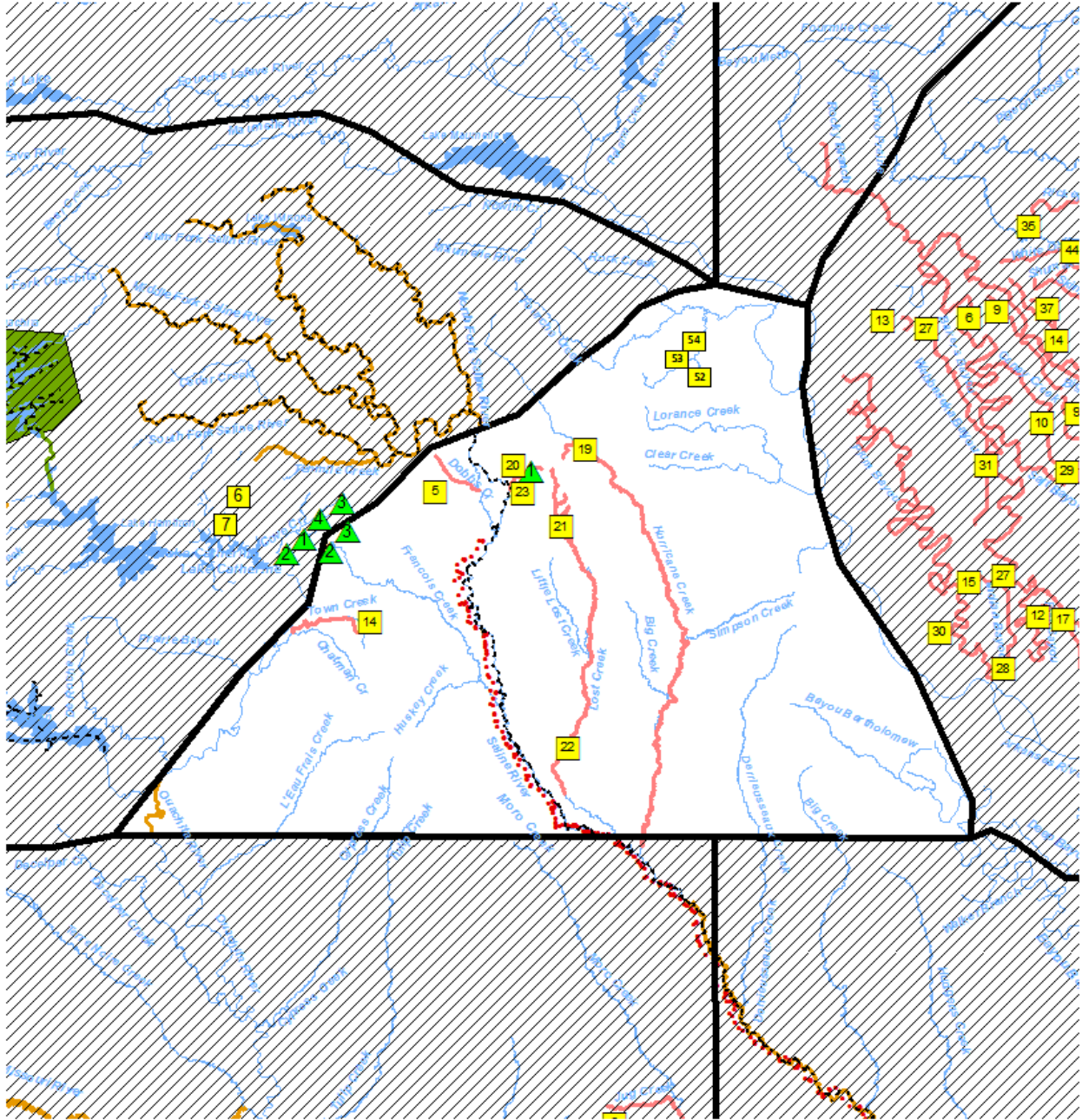


Plate GC-4 (Gulf Coastal Plain)

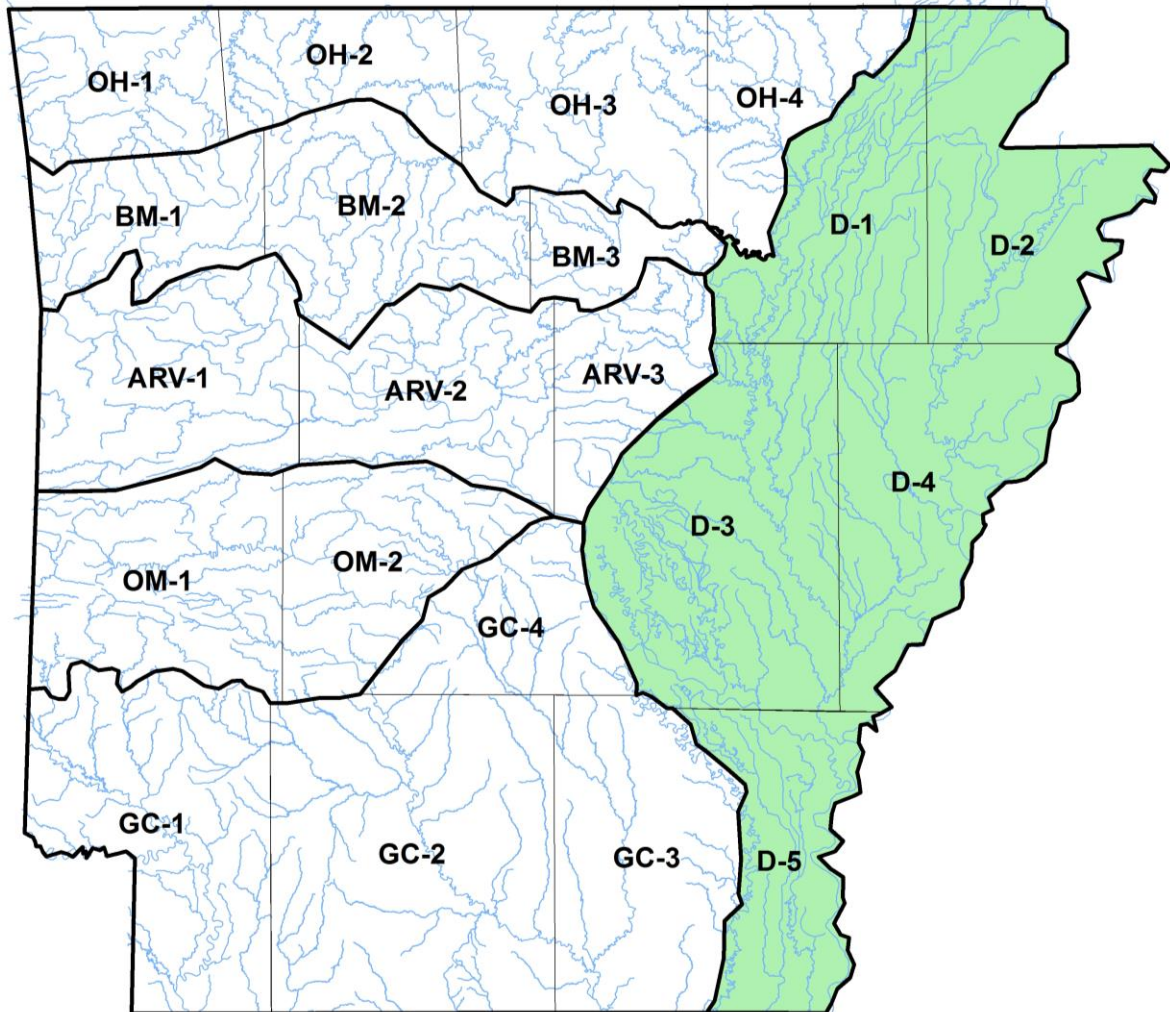


LEGEND

- - Extraordinary Resource Waters
- Natural and Scenic Waterways
- Variation by UAA
- Ecologically Sensitive Waterbodies
- ESW Caves, Springs, and Seeps
- Trout Waters
- ▲ Variation by EIP



Index to Plates of the Delta



DESIGNATED USES: DELTA ECOREGION

(Plates D-1, D-2, D-3, D-4, D-5)

Extraordinary Resource Waters

Second Creek (D-4)

Cache River above Cache Bayou - adjacent to natural areas (D-3)

Arkansas River below Norrell Lock and Dam (Dam #2) (D-5)

Strawberry River (D-1)

Two Prairie Bayou adjacent to natural areas (D-3)

Natural and Scenic Waterways

None

Ecologically Sensitive Waterbodies

Lower St. Francis River and lower 10 miles of Straight Slough - location of fat pocketbook mussel (D-2, D-4)

Right Hand Chute at confluence with St. Francis River - location of fat pocketbook mussel (D-2)

Departee Creek - location of flat floater mussel (D-1)

Black River at mouth of Spring River - location of pink mucket mussel (D-1)

Channel-altered Delta Ecoregion Streams - These include the majority of the streams in this ecoregion and are characterized by substantial alteration of the morphology of their main-stream channel as well as their tributary streams. Such alteration of the tributaries of these streams significantly affects the water quality and hydrology of the streams and their watersheds. Most of the upper segments of these waters have been dredged and straightened into ditches. Additionally most of the tributaries of these streams have been straightened, ditched and, in some cases, rerouted to quickly move water off the agriculture fields and into the major streams. In the lower segments of these waters, channel realignment is less expansive but most of these channels have been "snagged" to remove any in-stream obstructions (brush, logs, and other debris) and the stream channel and banks have been dredged to uniform depths and cleared of any obstructions. These include Cache River, Bayou DeView, Village Creek, Blackfish Bayou and others to be determined by the Department on a case by case basis.

Primary Contact Recreation - all streams with watersheds of greater than 10 mi² and all lakes/reservoirs**

Secondary Contact Recreation - all waters**

Domestic, Industrial and Agricultural Water Supply - all waters**

Aquatic Life**

Trout - none

Lakes and Reservoirs - all

Streams

Seasonal Delta aquatic life - all streams with watersheds of less than 10 mi² except as otherwise provided in Reg. 2.505

Perennial Delta aquatic life - all streams with watersheds 10 mi² or larger and those waters where discharges equal or exceed 1cfs

Site Specific Designated Use Variation Supported by Use Attainability Analysis

Unnamed ditch to Little LaGrue Bayou - perennial Delta aquatic life (D-3, #1)

Little Lake Bayou - seasonal Delta aquatic life; no primary contact (D-5, #2)

Coon Creek and unnamed tributary from Frit Ind. - no domestic water supply use (D-1, #3)

Rocky Branch Creek and Bayou Meto from Rocky Branch Creek to Bayou Two Prairie - no domestic water supply use (D-3 #4)

Ditch No. 27 – no domestic water supply use (D-2, #5)

Ditch No. 6 – no domestic water supply use (D-2, #6)

**Except for those waters with designated use variations supported by Use Attainability Analysis or other investigations.

SPECIFIC STANDARDS: DELTA ECOREGION

	(Plates D-1, D-2, D-3, D-4, D-5)				
	<u>Least-Altered Streams</u>		<u>Channel-Altered Streams</u>		<u>Lakes and Reservoirs</u>
Temperature °C (°F)*	30 (86)		32 (89.6)		32 (89.6)
White River	32 (89.6)				
St. Francis River	32 (89.6)				
Mississippi River	32 (89.6)				
Arkansas River	32 (89.6)				
Turbidity(NTU) (base/all)	45/84		75/250		25/45
Arkansas River (base/all)	50/52				
Mississippi River (base/all)	50/75				
St. Francis River (base/all)	75/100				
Minerals	see Reg. 2.511		see Reg. 2.511		see Reg. 2.511
Dissolved Oxygen (mg/L)**	<u>Pri</u>	<u>Crit</u>	<u>Pri</u>	<u>Crit.</u>	see Reg. 2.505
<10 mi ² watershed	5	2	5	2	
10 mi ² to 100 mi ²	5	3	5	3	
>100 mi ² watershed	5	5	5	5	
All other standards	(same as statewide)				

Site Specific Standards Variations Supported by Use Attainability Analysis

Unnamed ditch to Little LaGrue Bayou - from headwaters to confluence with Little LaGrue Bayou, critical season D.O. standard - 3 mg/L (D-3, #1)

Little Lake Bayou - critical season dissolved oxygen standard - 2 mg/L (D-5, #2)

Unnamed tributary from Frit Ind., to Coon Creek - sulfates 48 mg/L (D-1, #3)

Rocky Branch Creek- chlorides 64 mg/L (D-3, #4)

Bayou Meto from Rocky Branch Creek to Bayou Two Prairie – chlorides 64 mg/L (D-3, #4)

Bayou Meto from mouth to Pulaski/Lonoke county line- chlorides 95 mg/L; sulfates 45 mg/L (D-3, #4)

Ditch No. 27 – sulfates 480 mg/L; total dissolved solids 1,200 mg/L; maximum water temperature 95°F (D-2, #5)

Ditch No. 6 from Ditch No. 27 confluence to its mouth – sulfates 210 mg/L; total dissolved solids 630 mg/L (D-2, #6)

Tyrone River from Ditch No. 6 confluence to its mouth – sulfates 60 mg/L – see Reg. 2.511 (D-2, #7)

Long Pond Slough – chlorides 95 mg/L; sulfates 45 mg/L (D-3, #40)

Castor Bayou – chlorides 95 mg/L; sulfates 45 mg/L (D-3, #26)

Cross Bayou – chlorides 95 mg/L; sulfates 45 mg/L (D-3, #41)

Bayou Two Prairie (Pulaski/ Lonoke county line to Northern boundary of Smoke Hole Natural Area) - chlorides 95 mg/L; sulfates 45 mg/L (D-3, #42)

Bayou Two Prairie (Southern boundary of Smoke Hole Natural Area to Mouth) - chlorides 95 mg/L; sulfates 45 mg/L (D-3, #42)

Little Bayou Meto - chlorides 95 mg/L; sulfates 45 mg/L (D-3, #34)

Bakers Bayou - chlorides 95 mg/L; sulfates 45 mg/L (D-3, #6)
 Wabbaseka Bayou - chlorides 95 mg/L; sulfates 45mg/L (D-3, #27)
 Indian Bayou - chlorides 95 mg/L; sulfates 45 mg/L (D-3, #28)
 Flat Bayou - chlorides 95 mg/L; sulfates 45 mg/L (D-3, #12)
 Shumaker Branch - chlorides 95 mg/L; sulfates 45 mg/L (D-3, #11)
 Skinner Branch - chlorides 95 mg/L; sulfates 45 mg/L (D-3, #43)
 White Oak Branch - chlorides 95 mg/L; sulfates 45 mg/L (D-3, #44)
 Caney Creek - chlorides 95 mg/L; sulfates 45 mg/L (D-3, #10)
 Salt Bayou - chlorides 95 mg/L; sulfates 45 mg/L (D-3, #29)
 Snow Bayou - chlorides 95 mg/L; sulfates 45 mg/L (D-3, #13)
 Fish Trap Slough - chlorides 95 mg/L; sulfates 45 mg/L (D-3, #14)
 Ricky Branch - chlorides 95 mg/L; sulfates 45 mg/L (D-3, #45)
 Blue Point Ditch - chlorides 95 mg/L; sulfates 45 mg/L (D-3, #46)
 Big Ditch - chlorides 95 mg/L; sulfates 45 mg/L (D-3, #8)
 Main Ditch - chlorides 95 mg/L; sulfates 45 mg/L (D-3, #15)
 Plum Bayou - chlorides 95 mg/L; sulfates 45 mg/L (D-3, #30)
 Crooked Creek Ditch - chlorides 95 mg/L; sulfates 45 mg/L (D-3, #9)
 Indian Bayou Ditch - chlorides 95 mg/L; sulfates 45 mg/L (D-3, #31)
 Caney Creek Ditch - chlorides 95 mg/L; sulfates 45 mg/L (D-3, #10)
 Salt Bayou Ditch - chlorides 95 mg/L; sulfates 45 mg/L (D-3, #29)
 Bradley Slough - chlorides 95 mg/L; sulfates 45 mg/L (D-3, #17)
 Tupelo Bayou - chlorides 95 mg/L; sulfates 45 mg/L (D-3, #36)
 Dennis Slough - chlorides 95 mg/L; sulfates 45 mg/L (D-3, #16)
 Buffalo Slough - chlorides 95 mg/L; sulfates 45 mg/L (D-3, #32)
 Flynn Slough - chlorides 95 mg/L; sulfates 45 mg/L (D-3, #18)
 Boggy Slough - chlorides 95 mg/L; sulfates 45 mg/L (D-3, #19)
 Bear Bayou - chlorides 95 mg/L; sulfates 45 mg/L (D-3, #20)
 Bubbling Slough - chlorides 95 mg/L; sulfates 45 mg/L (D-3, #21)
 Five Forks Bayou - chlorides 95 mg/L; sulfates 45 mg/L (D-3, #33)
 Government Cypress Slough - chlorides 95 mg/L; sulfates 45 mg/L (D-3, #22)
 Brushy Slough - chlorides 95 mg/L; sulfates 45 mg/L (D-3, #23)
 Tipton Ditch - chlorides 95 mg/L; sulfates 45 mg/L (D-3, #38)
 Hurricane Slough - chlorides 95 mg/L; sulfates 45 mg/L (D-3, #24)
 Newton Bayou - chlorides 95 mg/L; sulfates 45 mg/L (D-3, #25)
 West Bayou - chlorides 95 mg/L; sulfates 45mg/L (D-3, #39)
 Brownsville Branch - chlorides 95 mg/L; sulfates 45 mg/L (D-3, #35)
 Eagle Branch - chlorides 95 mg/L; sulfates 45 mg/L (D-3, #37)
 Unnamed tributary to Big Creek — chlorides 71 mg/L, sulfates 60 mg/L, total dissolved solids 453 mg/L (D-1, # 38)
 Big Creek from Whistle Ditch to mouth of unnamed trib — chloride 58 mg/L, sulfates 49 mg/L (D-II, # 39)
 Bayou DeView from AR Hwy 14 to Whistle Ditch — chloride 48 mg/L, sulfates 38 mg/L, total dissolved solids
 411.3 mg/L (D-1, #40)
 Bayou DeView from mouth to AR Hwy 14 — chloride 48 mg/L, sulfates 37.3 mg/L, –total dissolved solids
 411.3mg/L (D-1, # 41)

* Increase over natural temperatures may not be more than 2.8°C (5°F).

** When water temperatures exceed 22°C, the critical season dissolved oxygen standard may be depressed by 1 mg/L for no more than 8 hours during a 24-hour period.

Plate D-1 (Delta)



LEGEND

- - Extraordinary Resource Waters
- Natural and Scenic Waterways
- Variation by UAA
- Ecologically Sensitive Waterbodies
- ESW Caves, Springs, and Seeps
- Trout_Waters

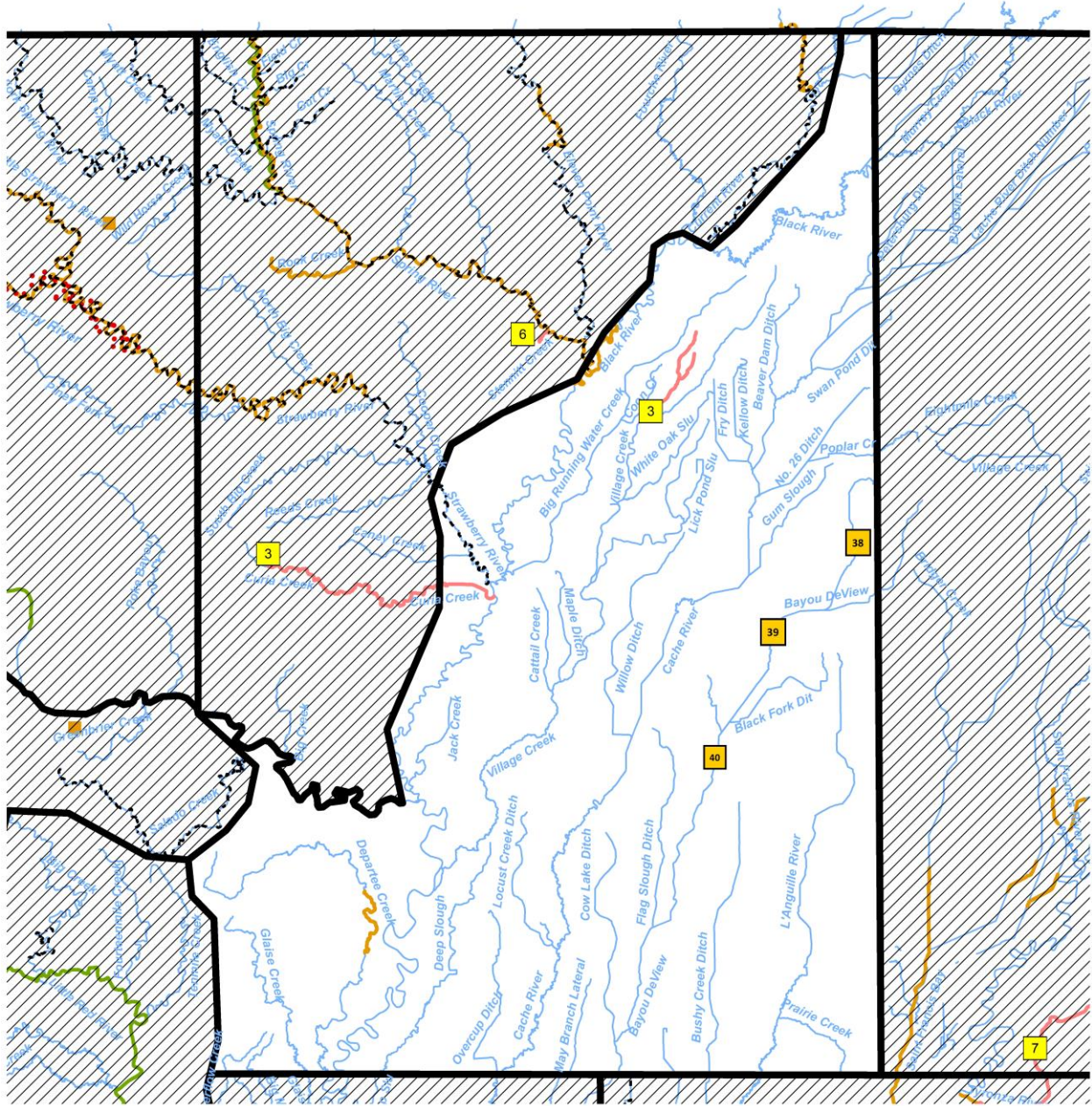
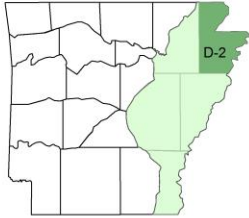


Plate D-2 (Delta)



LEGEND

- - Extraordinary Resource Waters
- Natural and Scenic Waterways
- Variation by UAA
- Ecologically Sensitive Waterbodies
- ESW Caves, Springs, and Seeps
- Trout_Waters

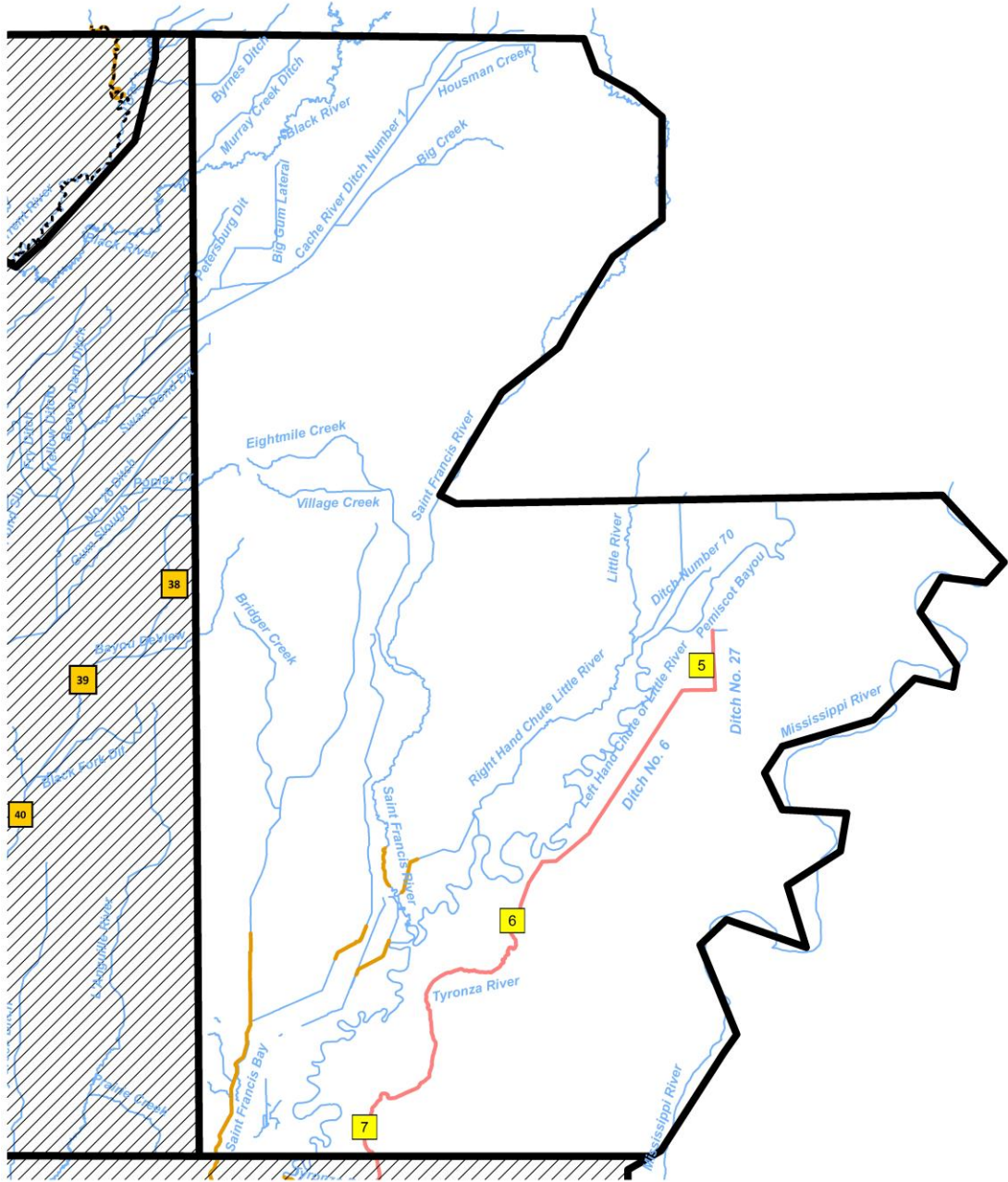
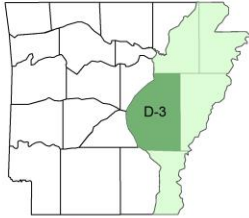


Plate D-3 (Delta)



LEGEND

- - Extraordinary Resource Waters
- Natural and Scenic Waterways
- Variation by UAA
- Ecologically Sensitive Waterbodies
- ESW Caves, Springs, and Seeps
- Trout_Waters

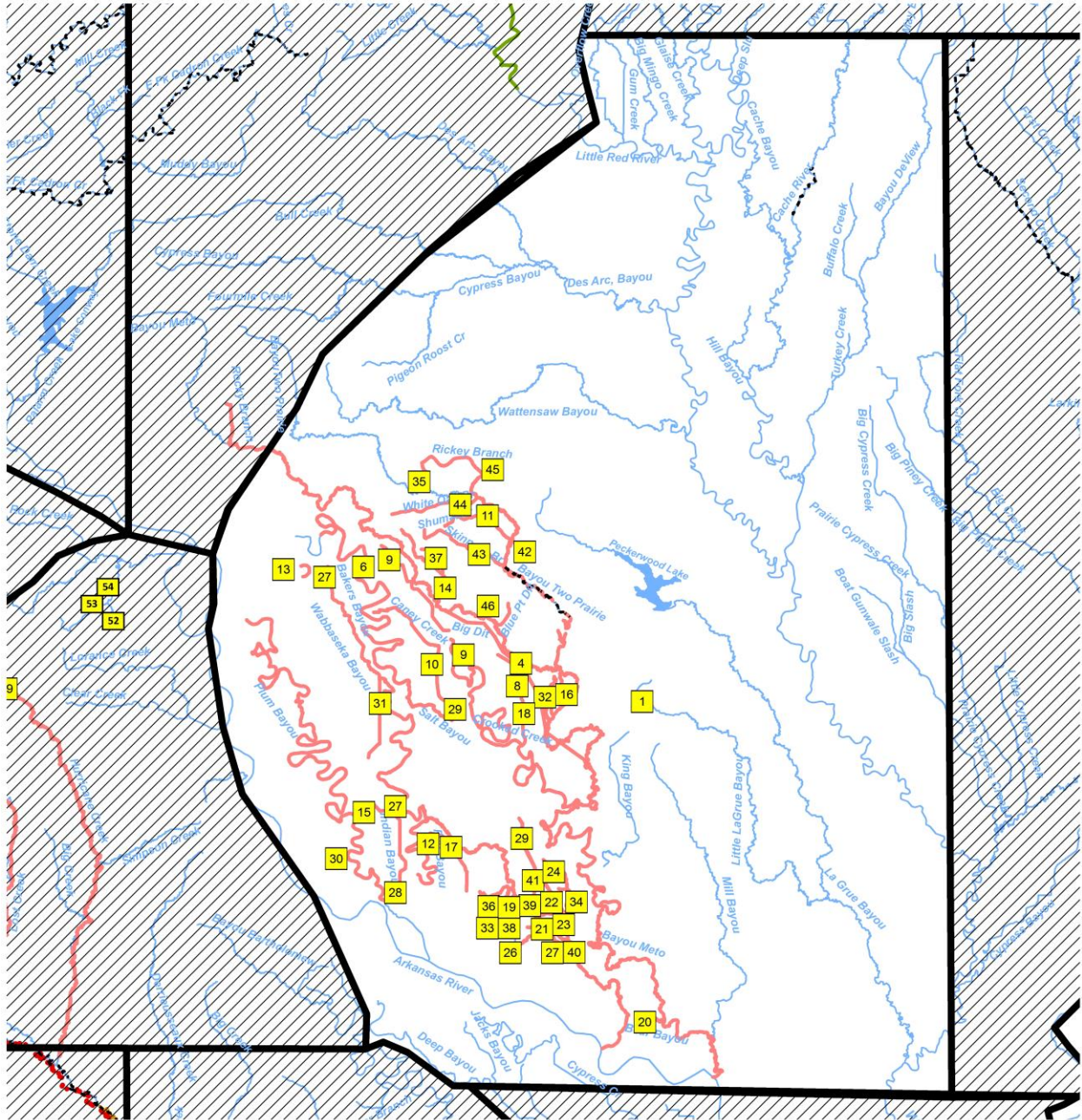
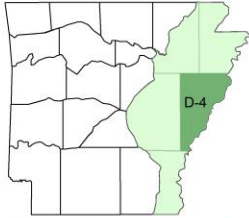


Plate D-4 (Delta)



LEGEND

- - Extraordinary Resource Waters
- Natural and Scenic Waterways
- Variation by UAA
- Ecologically Sensitive Waterbodies
- ESW Caves, Springs, and Seeps
- Trout_Waters

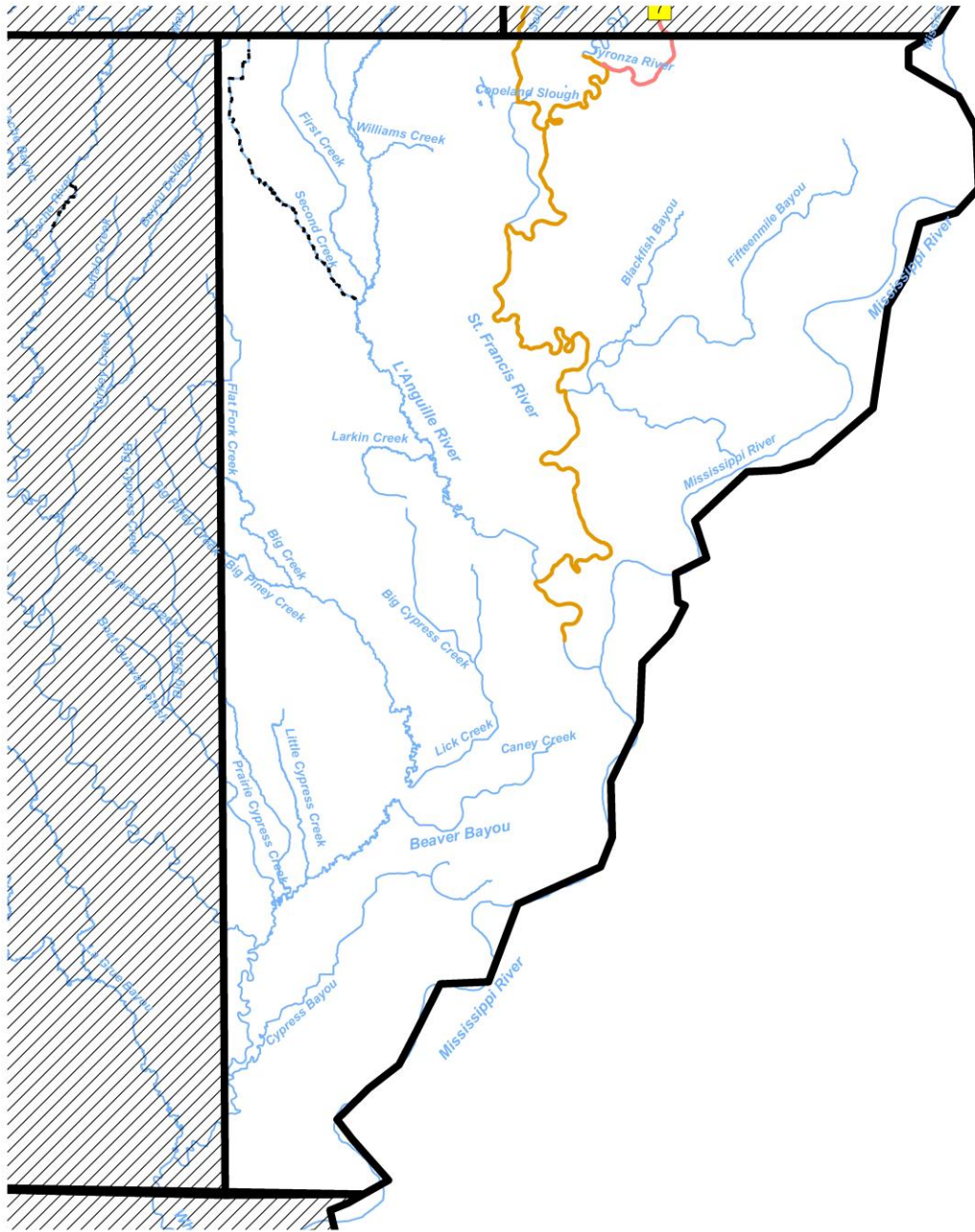
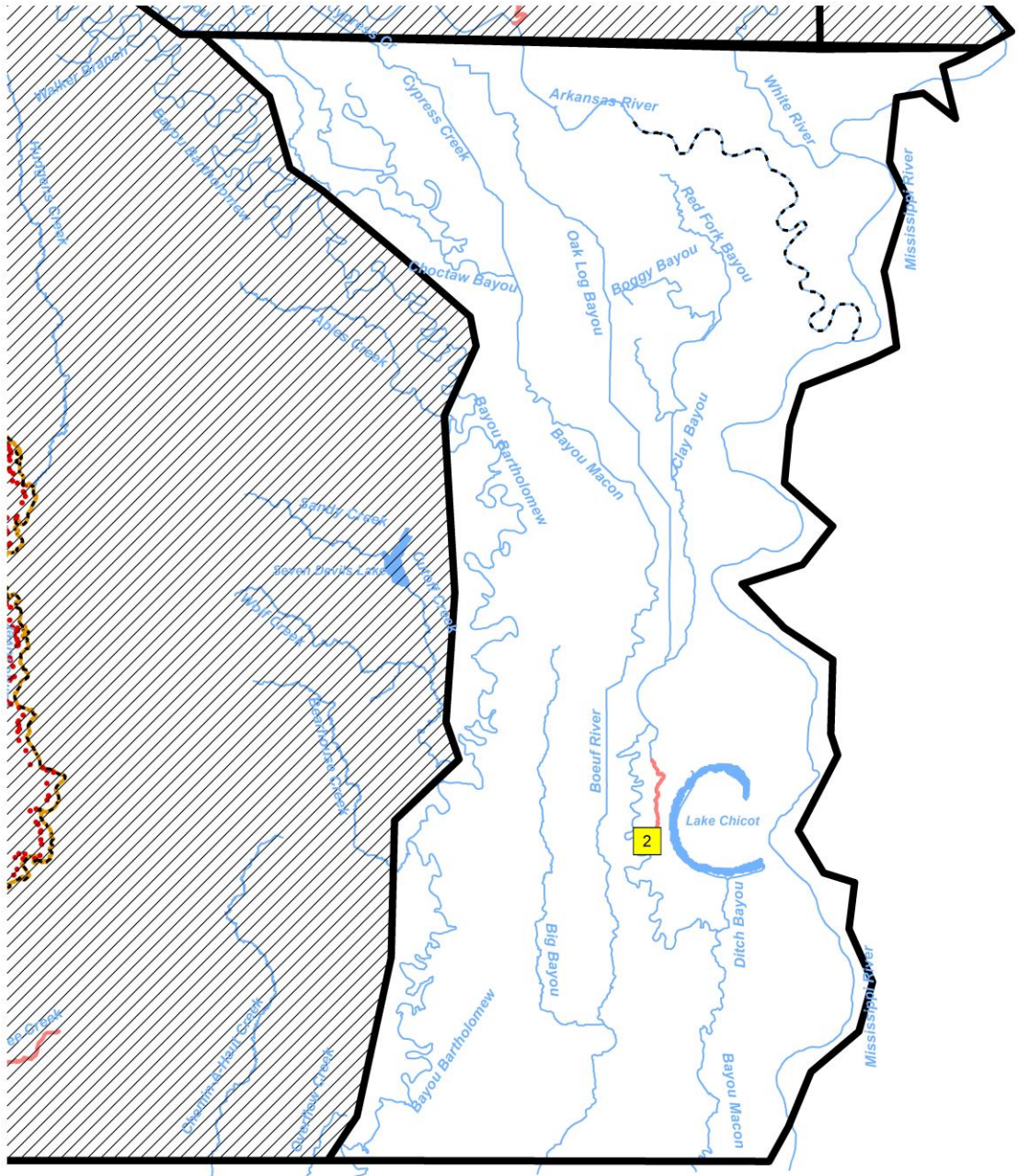


Plate D-5 (Delta)



LEGEND

- - Extraordinary Resource Waters
- Natural and Scenic Waterways
- Variation by UAA
- Ecologically Sensitive Waterbodies
- ESW Caves, Springs, and Seeps
- Trout_Waters



1



2

3

4

5

REGULATION NO. 2

6

7

APPENDIX B

8

9

10

Environmental Improvement Project

11

12

13

14

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43

APPENDIX B: ENVIRONMENTAL IMPROVEMENT PROJECT

Stricken language would be deleted from present law. Underlined language would be added to present law
State of Arkansas *As Engrossed: S2/21/97*

81st General Assembly **A Bill** ACT 401 OF 1997
Regular Session, 1997 HOUSE BILL 1563

By: Representatives Sheppard, Wallis, Lancaster, Johnson, and Horn
By: Senator Mahony

For An Act To Be Entitled

"AN ACT TO ENCOURAGE LONG-TERM ENVIRONMENTAL PROJECTS; AND
FOR OTHER PURPOSES."

Subtitle

"AN ACT TO ENCOURAGE LONG-TERM
ENVIRONMENTAL PROJECTS."

BE IT ENACTED BY THE GENERAL ASSEMBLY OF THE STATE OF ARKANSAS:

SECTION 1. Legislative Findings and Intent.

The General Assembly hereby finds that many areas of the state would benefit from long-term environmental remediation projects that significantly improve the effects caused by industrial or extractive activities. However, commitments by private enterprise to remedy such damages are discouraged by the prospect of civil liability based upon rigid application of state water quality standards to the enterprises activities. The purpose of this act is to preserve the states approach to establishing water quality standards, while also encouraging private enterprises to make significant improvements to closed or abandoned sites that are of such magnitude that more than three (3) years will be required to complete the project.

SECTION 2. Definitions and Applicability.

For the purposes of this act:

(1) "Long-term Improvement Project" or "Project" means any remediation or reclamation project at closed or abandoned:

- (A) Mineral Extraction Sites;
- (B) Solid Waste Management Units as defined pursuant to the Arkansas Hazardous Waste Management Act;
- (C) Oil and Gas Extraction Sites;
- (D) Brownfield Sites as defined in Act 125 of 1995 or as may be amended; and
- (E) Hazardous Substance Sites listed on the National Priority List (42 U.S.C. Section 9605), or State Priority List (Arkansas Code 8-7-509(e), or as may be amended.

(2) "Water Quality Standard" means standards developed through administrative rulemaking by the Commission;

- 1 (3) "Commission" means the Arkansas Pollution Control and Ecology Commission; and
- 2 (4) "Department" means the Arkansas Department of Pollution Control and Ecology.

3 SECTION 3. Procedures for approval of environmental projects, contents of
 4 applications, and public notice.

5 (a) A petitioner seeking approval of a change in water quality standards to accommodate
 6 a long-term environmental improvement project shall file with the Department a Notice of Intent,
 7 which includes as a minimum:

- 8 (1) A description of the water body or stream segment affected by the project;
- 9 (2) The existing ambient water quality for the use of criteria at issue;
- 10 (3) The affected water quality standard;
- 11 (4) The modifications sought;
- 12 (5) The proposed remediation activities;
- 13 (6) A proposed Remediation Plan, which shall contain:

14 (A) A description of the existing conditions, including identification of
 15 the conditions limiting the attainment of the water quality standards;

16 (B) A description of the proposed water quality standard modification,
 17 both during and post project;

18 (C) A description of the proposed remediation plan; and

19 (D) The anticipated collateral effects, if any, of the Remediation Plan; and

20 (7) A schedule for implementing the Remediation Plan that ensures that the post
 21 project water quality standards are met as soon as reasonably practicable.

22 (b) The department shall cause notice of the proposed project and associated water
 23 quality standard changes described in subsection (a) to be published for public notice and
 24 comment in the same manner as provided for permit applications in Arkansas Code 8-4-203(b),
 25 and shall advise the public that the details of the proposed project are available for public review.

26 (c) After considering comments from the public, the department shall notify the
 27 petitioner as to whether the proposed project is approved or denied. The department may deny
 28 approval of a project if it reasonably concludes that the plan is not complete, the plan is not
 29 technically sound, the schedule is unrealistic, the plan will not have an overall beneficial effect
 30 for the environment, or other appropriate reasons. Any department determination on the
 31 approval or denial of a project is subject to the appeal procedures applicable to permitting
 32 decisions set out in Arkansas Code 8-4-205.

33 (d) Upon approval of the project for further development, the petitioner shall prepare
 34 documentation required for third-party rulemaking by Arkansas Code 8-4-202 and established in
 35 administrative procedures.

36
 37 SECTION 4. Modification of Water Quality Standards.

38 (a) The commission may approve a modification where the water quality standard is not
 39 being maintained due to conditions which may, in part or in whole, be corrected through the
 40 implementation of long-term measures. The commission shall establish such subcategory of use
 41 and modify such general and specific standards as it deems appropriate to reflect such
 42 modification while ensuring that the fishable/swimmable use is maintained. In all water quality
 43 standard changes associated with long-term environmental projects, the remedial action plan
 44 described in subsection (a) of Section 3 of this act shall be incorporated by reference in the
 45 statement of basis and purpose of the rule and shall be considered an essential condition of the
 46 modified water quality standard.

1 (b) Once the commission approves a water quality standard modification, the department
 2 shall ensure that conditions and limitations designed to achieve compliance with the plan are
 3 established in applicable discharge permits, consent administrative orders, or such other
 4 enforcement measures deemed appropriate by the department. The department may allow
 5 modifications by the petitioner to the remediation plan and schedule as is deemed appropriate,
 6 provided that any such modifications to the original remedial action plan shall not render the
 7 project significantly less protective of the applicable use subcategory. Should the department
 8 find that the petitioner is not acting in good faith to complete the project in accordance with the
 9 approved plan, applicable and appropriate enforcement authority may be exercised subject to
 10 appeal to the commission.

11 (c) The department or the petitioner shall report annually to the commission on the
 12 progress of the project.

13
 14 SECTION 5. Project Completion.

15 At the end of the project the post project water quality standards shall be in full force and
 16 effect.

17
 18 SECTION 6. All provisions of this act of a general and permanent nature are amendatory
 19 to the Arkansas Code of 1987 Annotated and the Arkansas Code Revision Commission shall
 20 incorporate the same in the Code.

21
 22 SECTION 7. If any provision of this act or the application thereof to any person or
 23 circumstance is held invalid, such invalidity shall not affect other provisions or applications of
 24 the act which can be given effect without the invalid provision or application, and to this end the
 25 provisions of this act are declared to be severable.

26
 27 SECTION 8. All laws and parts of laws in conflict with this act are hereby repealed.

28
 29
 30
 31 /s/Sheppard et al
 32 APPROVED:3-07-97

33
 34
 35
 36
 37
 38
 39
 40
 41
 42
 43
 44
 45
 46

ARKANSAS POLLUTION CONTROL AND ECOLOGY COMMISSION



REGULATION NO. 2 APPENDIX C

Scientific Names of Aquatic Biota

APPENDIX C: SCIENTIFIC NAMES OF AQUATIC BIOTA

<u>Common Name</u>	<u>Species</u>	<u>Family</u>
Banded sculpin	<i>Cottus carolinae</i>	Cottidae
Banded pygmy sunfish	<i>Elassoma zonatum</i>	Elassomatidae
Bigeye shiner	<i>Notropis boops</i>	Cyprinidae
Black redhorse	<i>Moxostoma duquesnei</i>	Catostomidae
Blackside darter	<i>Percina maculata</i>	Percidae
Blacktail redhorse	<i>Moxostoma poecilurum</i>	Catostomidae
Blacktail shiner	<i>Cyprinella venusta</i>	Cyprinidae
Bleeding shiner	<i>Luxilus zonatus</i>	Cyprinidae
Bluegill	<i>Lepomis macrochirus</i>	Centrarchidae
Bluntnose minnow	<i>Pimephales notatus</i>	Cyprinidae
Bluntnose darter	<i>Etheostoma chlorosoma</i>	Percidae
Cardinal shiner	<i>Luxilus cardinalus</i>	Cyprinidae
Carp	<i>Cyprinus carpio</i>	Cyprinidae
Channel catfish	<i>Ictalurus punctatus</i>	Ictaluridae
Creek chubsucker	<i>Erimyzon oblongus</i>	Catostomidae
Creole darter	<i>Etheostoma collettei</i>	Percidae
Current River darter	<i>Etheostoma uniporum</i>	Percidae
Drum	<i>Aplodinotus grunniens</i>	Sciaenidae
Dusky darter	<i>Percina sciera</i>	Percidae
Duskystripe shiner	<i>Luxilus pilsbryi</i>	Cyprinidae
Emerald shiner	<i>Notropis atherinoides</i>	Cyprinidae
Fantail darter	<i>Etheostoma flabellare</i>	Percidae
Flier	<i>Centrarchus macropterus</i>	Centrarchidae
Freckled madtom	<i>Noturus nocturnus</i>	Ictaluridae
Gizzard shad	<i>Dorosoma cepedianum</i>	Clupeidae
Golden redhorse	<i>Moxostoma erythrurum</i>	Catostomidae
Redfin pickerel	<i>Esox americanus</i>	Esocidae
Gravel chub	<i>Erimystax x-punctatus</i>	Cyprinidae
Green sunfish	<i>Lepomis cyanellus</i>	Centrarchidae
Greenside darter	<i>Etheostoma blennioides</i>	Percidae
Largemouth bass	<i>Micropterus salmoides</i>	Centrarchidae
Longear sunfish	<i>Lepomis megalotis</i>	Centrarchidae
Longnose darter	<i>Percina nasuta</i>	Percidae
Madtoms	<i>Noturus sp.</i>	Ictaluridae
Mosquitofish	<i>Gambusia affinis</i>	Poeciliidae
Northern hogsucker	<i>Hypentelium nigricans</i>	Catostomidae
Northern studfish	<i>Fundulus catenatus</i>	Fundulidae
Orangebelly darter	<i>Etheostoma radiosum</i>	Percidae
Orangespotted sunfish	<i>Lepomis humilis</i>	Centrarchidae
Orangethroat darter	<i>Etheostoma spectabile</i>	Percidae
Ozark madtom	<i>Noturus albater</i>	Ictaluridae
Ozark minnow	<i>Notropis nubilus</i>	Cyprinidae
Pirate perch	<i>Aphredoderus sayanus</i>	Aphredoderidae
Pugnose minnow	<i>Opsopoeodus emiliae</i>	Cyprinidae

<u>Common Name</u>	<u>Species</u>	<u>Family</u>
Rainbow darter	<i>Etheostoma caeruleum</i>	Percidae
Redfin darter	<i>Etheostoma whipplei</i>	Percidae
Redfin shiner	<i>Lythrurus umbratilis</i>	Cyprinidae
Ribbon shiner	<i>Lythrurus fumeus</i>	Cyprinidae
"Rock basses"	<i>Ambloplites sp.</i>	Centrarchidae
Scaly sand darter	<i>Ammocrypta vivax</i>	Percidae
Shadow bass	<i>Ambloplites ariommus</i>	Centrarchidae
Slender madtom	<i>Noturus exilis</i>	Ictaluridae
Slough darter	<i>Etheostoma gracile</i>	Percidae
Smallmouth bass	<i>Micropterus dolomieu</i>	Centrarchidae
Smallmouth buffalo	<i>Ictiobus bubalus</i>	Catostomidae
Southern redbelly dace	<i>Chrosomus erythrogaster</i>	Cyprinidae
Spotted bass	<i>Micropterus punctulatus</i>	Centrarchidae
Spotted sucker	<i>Minytrema melanops</i>	Catostomidae
Spotted sunfish	<i>Lepomis punctatus</i>	Centrarchidae
Spotted gar	<i>Lepisosteus oculatus</i>	Lepisosteidae
Strawberry River darter	<i>Etheostoma fragi</i>	Percidae
Striped shiner	<i>Luxilus chrysocephalus</i>	Cyprinidae
Tadpole madtom	<i>Noturus gyrinus</i>	Ictaluridae
Warmouth	<i>Lepomis gulosus</i>	Centrarchidae
Wedgespot shiner	<i>Notropis greenei</i>	Cyprinidae
Whitetail shiner	<i>Cyprinella galactura</i>	Cyprinidae
Yellow bullhead	<i>Ameiurus natalis</i>	Ictaluridae

ARKANSAS POLLUTION CONTROL AND ECOLOGY COMMISSION



REGULATION NO. 2.

APPENDIX D

LIST OF CURRENT EXTRAORDINARY RESOURCE WATERS, ECOLOGICALLY SENSITIVE WATERBODIES, AND NATURAL AND SCENIC WATERWAYS

**APPENDIX D: LIST OF CURRENT EXTRAORDINARY
RESOURCE WATERS, ECOLOGICALLY SENSITIVE
WATERBODIES, AND NATURAL AND SCENIC WATERWAYS**

Extraordinary Resource Waters

Stream Name	Ecoregion	Plate
Alum Fork Saline River	Ouachita Mountains	OM-2
Archey Creek	Boston Mountains	BM-2
Arkansas River	Delta	D-5
Beech Creek	Boston Mountains	BM-3
Big Creek	Arkansas River Valley	ARV-3
Big Creek	Ozark Highlands	OH-4
Big Fork Creek	Ouachita Mountains	OM-1
Big Piney Creek	Boston Mountains	BM-2
Buffalo River	Boston Mountains	BM-1, BM-2
Buffalo River	Ozark Highlands	OH-2, OH-3
Bull Shoals Reservoir	Ozark Highlands	OH-2, OH-3
Cache River	Delta	D-3
Caddo River	Ouachita Mountains	OM-1, OM-2
Cadron Creek	Arkansas River Valley	ARV-2, ARV-3
Caney Creek	Ouachita Mountains	OM-1
Cossatot River	Ouachita Mountains	OM-1
Current River	Ozark Highlands	OH-4
DeGray Reservoir	Ouachita Mountains	OM-2
Devils Fork of Little Red River	Boston Mountains	BM-3
East Fork Cadron Creek	Arkansas River Valley	ARV-2, ARV-3
East Fork Illinois Bayou	Boston Mountains	BM-2
Eleven Point River	Ozark Highlands	OH-4
English Creek	Ozark Highlands	OH-4
Falling Water Creek	Boston Mountains	BM-2
Field Creek	Ozark Highlands	OH-4
Gut Creek	Ozark Highlands	OH-4
Hurricane Creek	Boston Mountains	BM-2
Illinois Bayou	Boston Mountains	BM-2
Kings River	Boston Mountains	BM-1
Kings River	Ozark Highlands	OH-2
Lake Ouachita	Ouachita Mountains	OM-1, OM-2
Lee Creek	Boston Mountains	BM-1
Lick Creek	Boston Mountains	BM-3
Little Missouri River	Ouachita Mountains	OM-1
Little Raccoon Creek	Boston Mountains	BM-3
Little Strawberry River	Ozark Highlands	OH-3
Middle Fork Illinois Bayou	Boston Mountains	BM-2
Middle Fork Little Red River	Boston Mountains	BM-2, BM-3
Middle Fork Saline River	Ouachita Mountains	OM-2
Moro Creek	Gulf Coastal Plain	GC-2
Mountain Fork River	Ouachita Mountains	OM-1
Mulberry River	Arkansas River Valley	ARV-1
Mulberry River	Boston Mountains	BM-1, BM-2

Myatt Creek	Ozark Highlands	OH-3, OH-4
North Fork Cadron Creek	Arkansas River Valley	ARV-2, ARV-3
North Fork Illinois Bayou	Boston Mountains	BM-2
North Fork Saline River	Ouachita Mountains	OM-2
North Sylamore Creek	Ozark Highlands	OH-3
Raccoon Creek	Boston Mountains	BM-3
Richland Creek	Boston Mountains	BM-2
Salado Creek	Boston Mountains	BM-3
Saline River	Gulf Coastal Plain	GC-2, GC-3
Saline River	Ouachita Mountains	OM-2
Second Creek	Delta	D-4
South Fork Caddo River	Ouachita Mountains	OM-1
South Fork Saline River	Ouachita Mountains	OM-2
South Fork Spring River	Ozark Highlands	OH-3, OH-4
Spring River	Ozark Highlands	OH-4
Strawberry River	Delta	D-1
Strawberry River	Ozark Highlands	OH-3, OH-4
Tomahawk Creek	Boston Mountains	BM-3
Turkey Creek	Boston Mountains	BM-3
Two Bayou Prairie	Delta	D-3

Natural and Scenic Waterways

Stream Name	Ecoregion	Plate
Big Piney Creek	Boston Mountains	BM-2*
Brushy Creek	Ouachita Mountains	OM-1
Buffalo River	Boston Mountains	BM-1, BM-2
Buffalo River	Ozark Highlands	OH-2, OH-3
Cossatot River	Ouachita Mountains	OM-1
Hurricane Creek	Boston Mountains	BM-2*
Kings River	Boston Mountains	BM-1
Kings River	Ozark Highlands	OH-2
Little Missouri River	Ouachita Mountains	OM-1
Mulberry River	Arkansas River Valley	ARV-1
Mulberry River	Boston Mountains	BM-1, BM-2
North Sylamore Creek	Ozark Highlands	OH-3*
Richland Creek	Boston Mountains	BM-2*
Saline River	Gulf Coastal Plain	GC-3
Strawberry River	Ozark Highlands	OH-3, OH-4

* As designated in the National Wild and Scenic Rivers System

Ecologically Sensitive Water Bodies

Stream Name	Ecoregion	Plate
Alum Fork Saline River	Ouachita Mountains	OM-2

Archey Creek	Boston Mountains	BM-2
Beech Fork	Boston Mountains	BM-3
Black River	Delta	D-1
Brushy Creek	Ouachita Mountains	OM-1
Caddo River	Ouachita Mountains	OM-1
Caney Creek	Ouachita Mountains	OM-1
Collier Creek	Ouachita Mountains	OM-1
Cossatot River	Ouachita Mountains	OM-1
Current River	Ozark Highlands	OH-4
Departee Creek	Delta	D-1
Devils Fork Little Red River	Boston Mountains	BM-3
Eleven Point River	Ozark Highlands	OH-4
Grassy Lake	Gulf Coastal Plain	GC-1
Illinois River	Ozark Highlands	OH-1
Little Missouri River	Ouachita Mountains	OM-1
Little Raccoon Creek	Boston Mountains	BM-3
Little Red River	Gulf Coastal Plain	GC-1
Little Strawberry River	Ozark Highlands	OH-3
Lick Creek	Boston Mountains	BM-3
Lick Creek	Ouachita Mountains	OM-1
Mayberry Creek	Ouachita Mountains	OM-2
Middle Fork Little Red River	Boston Mountains	BM-2, BM-3
Middle Fork Saline River	Ouachita Mountains	OM-2
Mill Creek	Ouachita Mountains	OM-1
Missouri River	Gulf Coastal Plain	GC-2
Mountain Fork River	Ouachita Mountains	OM-1
North Fork Saline River	Ouachita Mountains	OM-2
Otter Creek	Ozark Highlands	OH-3
Ouachita River	Ouachita Mountains	OM-1
Ouachita River	Gulf Coastal Plain	GC-2, GC-4
Polk Creek	Ouachita Mountains	OM-1
Robinson Creek	Ouachita Mountains	OM-1
St. Francis River	Delta	D-4
Saline River	Ouachita Mountains	OM-2
Saline River	Gulf Coastal Plain	GC-3
South Fork Caddo River	Ouachita Mountains	OM-1
South Fork Ouachita River	Ouachita Mountains	OM-1
South Fork Saline River	Ouachita Mountains	OM-2
Ten Mile Creek	Ouachita Mountains	OM-2
Raccoon Creek	Boston Mountains	BM-3
Right Hand Chute Little River	Delta	D-2
Rock Creek	Ouachita Mountains	OM-1
Rock Creek	Ozark Highlands	OH-4
South Fork Little Red River	Boston Mountains	BM-2
Spring River	Ozark Highlands	OH-4
Straight Slough	Delta	D-2, D-4

Strawberry River	Ozark Highlands	OH-3, OH-4
Tomahawk Creek	Boston Mountains	BM-3
Turkey Creek	Boston Mountains	BM-3
Various springs & spring-fed tributaries	Ozark Highlands	OH-1, OH-2, OH-3
White River	Boston Mountains	BM-1
Yellow Creek	Gulf Coastal Plain	GC-1

ARKANSAS POLLUTION CONTROL AND ECOLOGY COMMISSION



REGULATION NO. 2.

APPENDIX E

**Criteria to be Considered in Determining
Whether the Designated Use of
Extraordinary Resource Water, Ecologically
Sensitive Waterbody, or Natural and Scenic
Waterway Should be Maintained**

**APPENDIX E: CRITERIA TO BE CONSIDERED IN
DETERMINING WHETHER THE DESIGNATED USE OF
EXTRAORDINARY RESOURCE WATER, ECOLOGICALLY
SENSITIVE WATERBODY, OR NATURAL AND SCENIC
WATERWAY SHOULD BE MAINTAINED**

The determination of whether a designated use of Extraordinary Resource Water, Ecologically Sensitive Waterbody, or Natural and Scenic Waterway should be maintained in a given waterbody must be made on a case by case basis. At least 180 days prior to filing any petition authorized under Reg. 2.310 to initiate rulemaking with the Commission to remove the designated use of Extraordinary Resource Water, Ecologically Sensitive Waterbody, or Natural and Scenic Waterway from a free flowing waterbody for the purpose of constructing a reservoir to provide a domestic water supply, the petitioner shall submit to the Department information and supporting documentation which address each of the following:

- (A) Describe generally and specifically the state of the existing water quality;
- (B) Identify the presence of key and indicator species of fish adapted to flowing water systems and state the extent to which these species are present in the waterbody;
- (C) Describe the extent to which water quality and physical habitat, including wetlands, support other plant or animal life and identify the species;
- (D) Identify the presence of, and state the extent to which, other wildlife uses are dependent upon the waterbody;
- (E) State the extent to which water quality and physical habitat support threatened, endangered, or endemic aquatic or semi-aquatic species and identify those species;
- (F) Specify the extent to which the waterbody supports a high diversity of aquatic species and identify the presence and frequency of the species;
- (G) Describe and identify the extent to which physical or chemical characteristics of the waterbody provide an unusual or uncommon aquatic habitat;
- (H) Describe the extent to which physical or chemical characteristics give the waterbody unusual or unique aesthetic attributes;
- (I) Specify the extent of the use of the waterbody for recreation in or on the water, such as fishing, swimming, and boating (including but not limited to canoeing, kayaking, or rafting), or use of the waterbody for commercial activity, including tourism;
- (J) Identify and describe the intangible social values associated with the free flowing characteristics of the waterbody;
- (K) Identify the presence and location of gorges, rapids, waterfalls, or other significant geologic features;
- (L) Identify the presence and location of scenic areas and sites potentially impacted by the reservoir;

- (M) Identify the presence and location of rare and/or irreplaceable natural areas potentially impacted by the reservoir;
- (N) Identify the presence and location of known archeological sites potentially impacted by the reservoir;
- (O) Identify the presence and location of historic resources potentially impacted by the reservoir;
- (P) Delineate the extent to which the waterbody is located within the boundaries of, flows through, or is adjacent to state or federal forest land, parks, natural areas, nature preserves, refuges, or wildlife management areas;
- (Q) Describe the extent to which the waterbody is used for educational, scientific, or research purposes;
- (R) Identify the waterbody's use or potential use as an ecoregion reference stream;
- (S) Describe the land uses, and the geographical extent of each, occurring within the watershed;
- (T) Identify the presence and location of all permitted point sources discharging to the waterbody;
- (U) Identify the presence and location of existing alterations, diversions or man-made impoundments; and
- (V) Provide the frequency of occasions when there is no natural flow in the waterbody, and the Q7-10 flow values for the waterbody.

ARKANSAS POLLUTION CONTROL AND ECOLOGY COMMISSION



REGULATION NO. 2.

APPENDIX F

**Factors Considered In Adding the Designated
Use of Extraordinary Resource Water,
Ecologically Sensitive Waterbody, or Natural
and Scenic Waterway to a Waterbody or
Waterbody Segment**

APPENDIX F: FACTORS CONSIDERED IN ADDING THE DESIGNATED USE OF EXTRAORDINARY RESOURCE WATER, ECOLOGICALLY SENSITIVE WATERBODY, OR NATURAL AND SCENIC WATERWAY TO A WATERBODY OR WATERBODY SEGMENT

The Commission shall consider the following supporting documentation in determining whether a waterbody should be designated as an Extraordinary Resource Water, Ecologically Sensitive Waterbody, or Natural and Scenic Waterway:

- (A) Location – The waterbody is within the boundaries of or flows through or is adjacent to state or federal forest land, parks, natural areas, nature preserves, refuges, or wildlife management areas, or the watershed may include remote, primitive, or relatively undeveloped areas;
- (B) Existing water quality – pristine, naturally-occurring, or unique;
- (C) Ecological value – The presence of water quality and physical habitat that supports threatened, endangered, or sensitive species, the presence of any threatened, endangered, or sensitive species, and/or water quality that supports an exceptional high diversity of aquatic species (fish or benthic macroinvertebrates) as categorized by an appropriate index of biological integrity (IBI) protocol;
- (D) Presence of physical or chemical characteristics that provide an unusual or uncommon aquatic habitat;
- (E) Special attributes of the waterbody that make it an outstanding resource, including but not limited to the presence of archeological sites, historical sites, or rare or valuable wildlife habitat;
- (F) Aesthetic Value- the presence of scenic areas or sites or scenic beauty resulting from natural features of the basin such as flow, topography, geology, ecology, physiography (i.e., waterfalls, gorges, rapids, or other special features), or the presence of characteristics giving the waterbody unique or unusual attributes;
- (G) Recreational Value- Use of the waterbody for:
 - (1) Fishing, rafting, kayaking, camping, family outings, backpacking, bird watching, etc.,
 - (2) Presence of hiking trails or scenic road or highway alongside, and
 - (3) Attracting tourism;
- (H) Use of the waterbody for educational, scientific, or research purposes;
- (I) Presence of rare and/or irreplaceable natural areas; and
- (J) Impacts the designation may have on current uses, upstream users, downstream users, and potential future uses of the waterbody or waterbody segment.

ARKANSAS REGISTER

Transmittal Sheet

* Use only for **FINAL** and **EMERGENCY RULES**



Secretary of State
Mark Martin
State Capitol, Suite 026
Little Rock, Arkansas 72201-1094
(501) 682-3527
www.sos.arkansas.gov



For Office
Use Only:

Effective Date _____ Code Number _____

Name of Agency Arkansas Pollution Control & Ecology Commission

Department Division of Environmental Quality

Contact Michael McAlister E-mail mcalister@adeq.state.ar.us Phone (501) 682-0918
Ark. Code Ann. §8-1-203(b)(1)

Statutory Authority for Promulgating Rules _____

Rule No. 2, Vulcan Construction Materials, LLC Third-Party
Rule Title: Rulemaking; Docket No 19-001-R; Minute Order 20-05

Intended Effective Date
(Check One)

Emergency (ACA 25-15-204)

30 Days After Filing (ACA 25-15-204)

Other 10 Days After Filing
(Must be more than 30 days after filing date.)

	Date
Legal Notice Published	<u>06/28/2019</u>
Final Date for Public Comment	<u>09/11/2019</u>
Reviewed by Legislative Council	<u>11/04/2019</u>
Adopted by State Agency	<u>01/24/2020</u>

Electronic Copy of Rule submitted under ACA 25-15-218 by:

Contact Person

E-mail Address

Date

CERTIFICATION OF AUTHORIZED OFFICER

I Hereby Certify That The Attached Rules Were Adopted
In Compliance with Act 434 of 1967 the Arkansas Administrative Procedures Act. (ACA 25-15-201 et. seq.)

Signature

(501) 682-7890 moulton@adeq.state.ar.us
Phone Number E-mail Address

Administrative Law Judge
Title

02/03/20
Date

FILED
AR REGISTER DIV.
2020 FEB -3 PM:24
STATE OF ARKANSAS
BY



ARKANSAS POLLUTION CONTROL & ECOLOGY COMMISSION

101 EAST CAPITOL
SUITE 205
LITTLE ROCK, ARKANSAS 72201
PHONE: (501) 682-7890
FAX: (501) 682-7891

RECEIVED

FEB 04 2020

BUREAU OF
LEGISLATIVE RESEARCH

February 3, 2020

Ms. Jessica Sutton
Administrative Rules and Regulations Committee
Room 433, State Capitol Building
Little Rock, Arkansas 72201

RE: Rule No 2, Vulcan Construction Materials, LLC Third-Party
Rulemaking; Docket No. 19-001-R; Minute Order No. 20-05 -
FINAL FILING.

Dear Ms. Davis:

I am enclosing the following for filing with your office:

1. One (1) hard copy of Rule No 2, Vulcan Construction Materials, LLC Third-Party Rulemaking.
2. One (1) copy of Commission Minute Order No. 20-05
3. One (1) copy of the Financial Impact Statement.

Please provide written confirmation of your receipt of these materials by file-marking the enclosed copy of this letter and returning it to me.

Thank you for your assistance in this matter.

Respectfully,

A handwritten signature in cursive script that reads "Charles Moulton".

Charles Moulton
Administrative Law Judge

Enclosures

ARKANSAS STATE LIBRARY



Agency Certification Form For Depositing Final Rules and Regulations At the Arkansas State Library

Documents Services • Arkansas State Library
One Capitol Mall • Little Rock, AR 72201-1094
501-682-2326 Phone; 501-682-1532 FAX

FILED
 DOCUMENTS SERVICES
 2020 FEB -3 PM 3:09
 ARKANSAS STATE LIBRARY

For Office Use Only		
Effective Date:		Classification Number:
Name of Agency: Division of Environmental Quality		
Contact Person: Michael McAlister		Telephone: (501) 682-0918
Statutory Authority for Promulgating Rules: Ark. Code Ann. §8-1-203(b)(1)		
Title of Rule: Rule No 2, Vulcan Construction Materials, LLC Third-Party Rulemaking; Docket No. 19-001-R; Minute Order 20-05		
Rule Status	Effective Date Status	Effective Date
<input type="checkbox"/> New Rule/Regulation	<input type="checkbox"/> Emergency	
<input type="checkbox"/> Amended Rule/Regulation	10 Days after filing	February 13, 2020
<input type="checkbox"/> Repealed Rule/Regulation	<input type="checkbox"/> Other	
<input type="checkbox"/> Order	<input type="checkbox"/> Repealed	
<input type="checkbox"/> Emergency Rule/Regulation	Adopted by State Agency	
<input type="checkbox"/> Rule above is proposed and will be replaced by final version <input checked="" type="checkbox"/> Financial and/or Fiscal Impact Statement Attached		
<h3>Certification of Authorized Officer</h3> <p>I hereby certify that the attached rules were adopted in compliance with Act 434 of 1967 as amended.</p> <p>Signature: <u><i>Charles McAlister</i></u> Date: <u>February 3, 2020</u></p> <p>Title: <u>Administrative Law Judge</u></p>		

**ARKANSAS POLLUTION CONTROL
AND ECOLOGY COMMISSION**

**SUBJECT – Vulcan Construction
Materials, LLC Third-Party Rulemaking**

**VULCAN CONSTRUCTION MATERIALS,
LLC**

DOCKET NO. 19-001-R


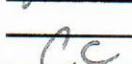





MINUTE ORDER NO. 20-05


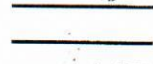
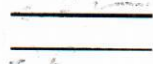
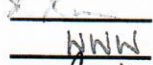
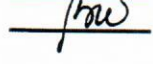

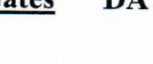
PAGE 1 OF 1

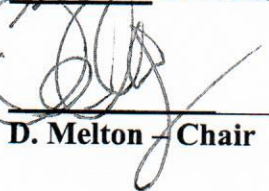
Petitioner Vulcan Construction Materials, LLC's Motion for the Adoption of Proposed Amendments to Rule No. 2 is before the Arkansas Pollution Control and Ecology Commission. Pursuant to public notice and hearing, and in consideration of the Petition to Initiate Third-Party Rulemaking, comments received during the public comment period, the Statement of Basis and Purpose, and other pleadings, exhibits, and evidence constituting the record in this Docket, the Commission hereby grants the Motion for the Adoption of Proposed Amendments to Rule No. 2. The amendments to Rule No. 2, found in the Final Revised Rule and attached to the Motion for Adoption of Proposed Amendments to Rule No. 2 as Exhibit C, are hereby adopted.

**PROMULGATED THIS 24TH DAY OF JANUARY, 2020, BY ORDER OF THE
ARKANSAS POLLUTION CONTROL AND ECOLOGY COMMISSION**

COMMISSIONERS

 L. Bengal
 A. Bigger
 C. Colclasure
 J. Fox
 M. Goggans
 D. Haak, PhD
 B. Holland

 R. McMullen, PhD
 D. Melton ~~REUSED~~
 R. Moss, Jr.
 R. Reynolds ~~RECUSED~~
 R. Roper
 W. Ward
 B. White

 D. Melton – Chair SUBMITTED BY: Allan Gates DATE PASSED: 01/24/20